



**Environmental  
Protection Agency**

Division of Surface Water

# **Application for Authorization Class B Biosolids Beneficial Use Sites**

**Division of Surface Water**  
Application for Authorization  
Class B Beneficial Use Sites

**Form BUA-1**

**Biosolids Treatment Works Information**

Treatment works name: Dovetail Energy, LLC		
Ohio NPDES permit #: 11N00305*AD		County: Greene
Mailing address: 5755 Granger Rd. Suite 320		
City: Independence	State: Ohio	Zip: 44131
Operator of record: Bruce Bailey, VP of Technical Affairs		
Telephone number: (216) 986-9999		
Email address (if available): bbailey@quasareg.com		

**Certification Statement**

1. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.
2. I have read and understand Chapter 3745-40 of the Ohio Administrative Code (OAC) and I agree to beneficially use biosolids in accordance with all applicable beneficial use requirements and restrictions established in Chapter 3745-40 of the Ohio Administrative Code.
3. I agree to only beneficially use biosolids that have satisfied a pathogen reduction alternative and a vector attraction reduction option and have metals concentration below the pollutant ceiling concentrations as established in Chapter 3745-40 of the Ohio Administrative Code.
4. I agree to maintain all applicable records established in Chapter 3745-40 of the Ohio Administrative Code.

  
\_\_\_\_\_  
Signature

\_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_  
Date

**This form shall be signed by the operator of record for the treatment works.**

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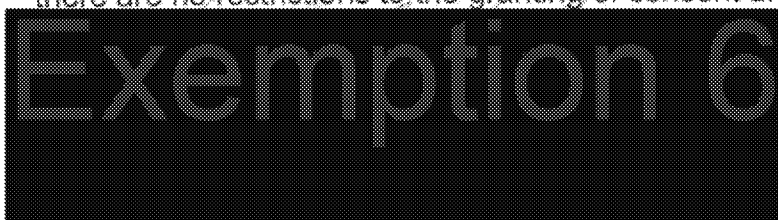
Form BUA-2

Owner Consent for Beneficial Use



Certification Statement

1. I agree to allow biosolids generated by the treatment plant identified on Form BUA-1 to be beneficially used on my property at agronomic rates.
2. I agree to allow federal, state and local regulatory staff access to the beneficial use site for the purposes of inspecting and authorizing the beneficial use site, beneficially using biosolids, and collecting and analyzing samples from the beneficial use site. I reserve the right to ask the above parties for proper identification at any time.
3. I certify that I am holder of legal title to the property described on application form BUA-4, or am authorized by the holder to give consent for the land application of biosolids, and that there are no restrictions to the granting of consent under this form.



12 / 31 / 2014  
Date

In the event the owner of the beneficial use site changes, Form BUA-2 must be revised and resubmitted to Ohio EPA.



## Form BUA-3

### Beneficial Use Site Operator Consent for Beneficial Use

Beneficial use site operator: Pitstick Pork Farms, Inc.		
Mailing address: 1146 Herr Rd		
City: Fairborn	State: OH	Zip: 45324
Telephone number: 937-879-0154		
Email address (if available): tvpitstick@gmail.com		

### Certification Statement

I agree to be responsible for complying with all applicable beneficial use requirements established in Chapter 3745-40 of the Ohio Administrative Code.

Tom Pitstick, Pres.  
Signature

4 / 12 / 14  
Date

In the event the operator of the beneficial use site changes, Form BUA-3 must be revised and resubmitted to Ohio EPA.

### Beneficial User Information

Beneficial user:		
Contact person:		
Mailing address:		
City:	State:	Zip:
Telephone number:		
Email address (if available):		





GRQ-04-01 (Mc87)

W Enon Rd

St Andrews Dr

Greenbriar Dr

Inverness Dr

Augusta Dr

W Dayton  
Goggiew Springs Rd

1054 ft

Google earth

ED\_014244A\_00000167-00006

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Form BUA-4 Page 1 of 2

Beneficial Use Site Information

Ohio EPA Site I.D. (Ohio EPA Use Only)

Field site I.D.: GRQ-04-01 (Mc87)	
Beneficial use site location: NW Corner of W. Dayton Yellow Springs Rd. and W. Enon Rd.	
County: Greene	Township: Bath
Latitude: 39°47'47.71"N	Longitude: 83°56'59.00"W

Total acreage proposed for beneficial use: 79															
Soil pH (s.u.): 6.5	Soil phosphorus (mg/kg): 15.0														
Bedrock depth (feet): >3ft	Bray Kurtz P1 <input checked="" type="checkbox"/> Mehlich 3 <input type="checkbox"/>														
Type of crops to be grown:															
<table border="1"><thead><tr><th>Crop Type</th><th>Expected Yield</th></tr></thead><tbody><tr><td>Corn</td><td>200 bu</td></tr><tr><td>Soybeans</td><td>50 bu</td></tr><tr><td>Wheat</td><td></td></tr><tr><td>Pasture</td><td></td></tr><tr><td>Hay</td><td></td></tr><tr><td>Other:</td><td></td></tr></tbody></table>		Crop Type	Expected Yield	Corn	200 bu	Soybeans	50 bu	Wheat		Pasture		Hay		Other:	
Crop Type	Expected Yield														
Corn	200 bu														
Soybeans	50 bu														
Wheat															
Pasture															
Hay															
Other:															

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Soil Types:

Soil Unit Symbol	Soil Unit Name	Hydrologic Soil Group
Ag	Algiers silt loam	B/D
Bs	Brookston silty clay loam, fine texture, 0-2% slopes	C/D
EmB	Eldean silt loam 2-6% slopes	B
EmB2	Eldean silt loam, 2-6% slopes, moderately eroded	B
EmC2	Eldean silt loam, 6-12% slopes, moderately eroded	B
MhB2	Miamian silt loam, 2-6% slopes, eroded	C
MhC2	Miamian silt loam, 6-12% slopes, moderately eroded	C
MhD2	Miamian silt loam, 12-18% slopes, moderately eroded	C
MmE2	Miamian-Casco complex, 18-35% slopes, moderately eroded	C
MrB	Miamian-Urban land complex, undulating	
MtA	Milton silt loam, 0-2% slopes	C
MtB	Milton silt loam, 2-6% slopes	C
OcB	Ockley silt loam, Southern Ohio Till Plain, 2-6% slopes	B
Pa	Patton silty clay loam	C/D
XeB	Xenia silt loam, 2-6% slopes	C

Are any endangered species or endangered species habitats located on the beneficial use site?

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
------------------------------	--

If "Yes" is marked, list the types of endangered species or endangered species habitat:

--	--

Have biosolids been beneficially used on the site since July 20, 1993?

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
------------------------------	--

If "Yes" is marked, list the biosolids generators and years beneficial use occurred:

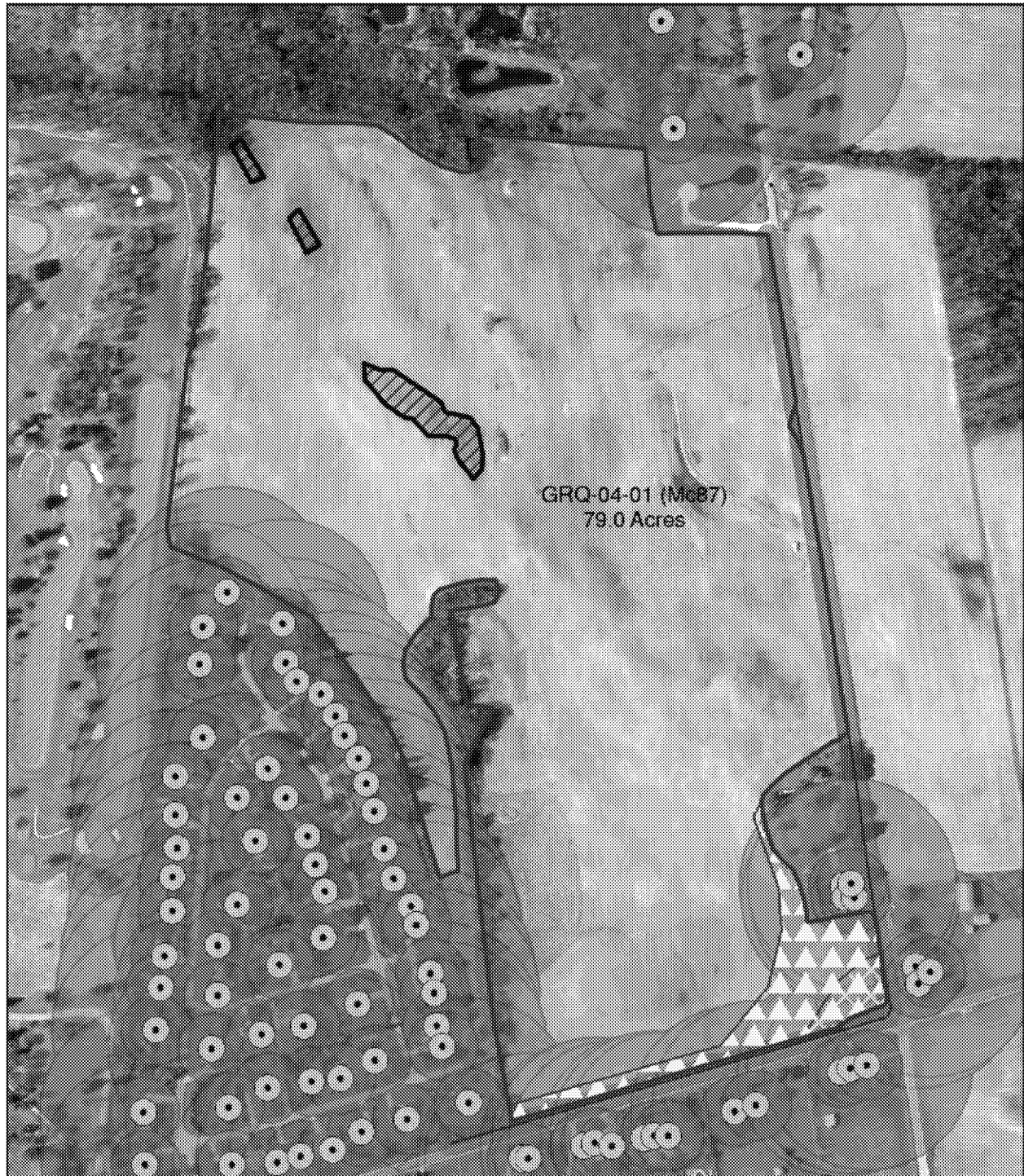
Generator	Year of Beneficial Use

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

The application must also include all of the following.

- A soil map of the proposed beneficial use site.
- An aerial map of the proposed beneficial use site that clearly identifies the entrance of the beneficial use site from the nearest road and all applicable isolation distances as established in Chapter 3745-40 of the Ohio Administrative Code.
- A vicinity road map at or near the township level that clearly identifies the proposed beneficial use site with all roads labeled.
- A copy of the most recent soil test results identified in this form.

# GRQ-04-01 (Mc87)



0 150 300 600 900 1,200 Feet

-  GRQ-04-01 Slope Exclusion
-  MtB Soil Exclusion
-  MtA Soil Exclusion
-  Watercourse
-  Residences
-  100ftbuffer
-  300ftbuffer
-  33ftbuffer

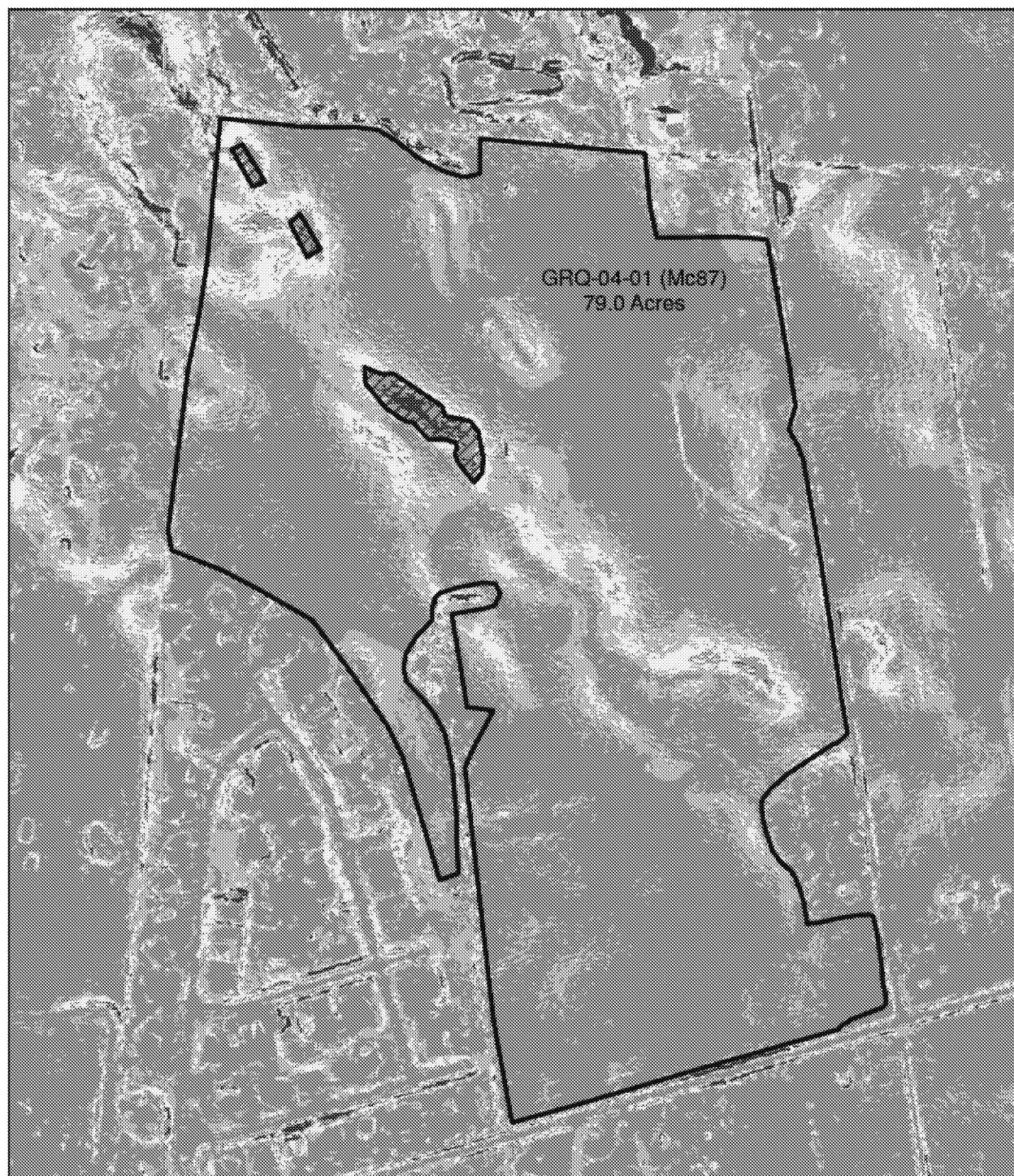
# GRQ-04-01 (Mc87)




0 150 300 600 900 1,200 Feet

5ft\_contours

# GRQ-04-01 (Mc87)



0 150 300 600 900 1,200 Feet

 GRQ-04-01 Slope Exclusion

**slope**

**% Rise**

 0-5

 5-10

 10-15

 15-20

 >20

# Custom Soil Resource Report Soil Map



Map Scale: 1:5,090 if printed on A portrait (8.5" x 11") sheet.

0 50 100 200 300 Meters

0 200 400 800 1200 Feet


Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

8


## Custom Soil Resource Report


### MAP LEGEND


#### Area of Interest (AOI)

 Area of Interest (AOI)


#### Soils


 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

#### Special Point Features

 Blowout


 Borrow Pit


 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill


 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water


 Perennial Water

 Rock Outcrop

 Saline Spot


 Sandy Spot


 Severely Eroded Spot


 Sinkhole


 Slide or Slip


 Sodic Spot


 Spoil Area

 Stony Spot


 Very Stony Spot

 Wet Spot

 Other

 Special Line Features


#### Water Features


 Streams and Canals


#### Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

#### Background

 Aerial Photography

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>  
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Greene County, Ohio  
Survey Area Data: Version 11, Sep 18, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 30, 2010—Mar 10, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Greene County, Ohio (OH057)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ag	Algiers silt loam	3.5	4.2%
Bs	Brookston silty clay loam, fine texture, 0 to 2 percent slopes	0.0	0.0%
EmB	Eldean silt loam, 2 to 6 percent slopes	0.1	0.1%
EmB2	Eldean silt loam, 2 to 6 percent slopes, moderately eroded	7.0	8.5%
EmC2	Eldean silt loam, 6 to 12 percent slopes, moderately eroded	1.6	2.0%
MhB2	Miamian silt loam, 2 to 6 percent slopes, eroded	4.8	5.9%
MhC2	Miamian silt loam, 6 to 12 percent slopes, moderately eroded	4.1	5.0%
MhD2	Miamian silt loam, 12 to 18 percent slopes, moderately eroded	7.8	9.5%
MmE2	Miamian-Casco complex, 18 to 35 percent slopes, moderately eroded	3.5	4.3%
MrB	Miamian-Urban land complex, undulating	2.3	2.8%
MtA	Milton silt loam, 0 to 2 percent slopes	0.5	0.6%
MtB	Milton silt loam, 2 to 6 percent slopes	3.0	3.7%
OcB	Ockley silt loam, Southern Ohio Till Plain, 2 to 6 percent slopes	17.9	21.7%
Pa	Patton silty clay loam	16.7	20.2%
XeB	Xenia silt loam, 2 to 6 percent slopes	9.5	11.5%
<b>Totals for Area of Interest</b>		<b>82.3</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape,

## Greene County, Ohio

### Ag—Algiers silt loam

#### Map Unit Setting

*National map unit symbol:* 5p4m

*Elevation:* 950 to 1,130 feet

*Mean annual precipitation:* 32 to 45 inches

*Mean annual air temperature:* 48 to 55 degrees F

*Frost-free period:* 155 to 180 days

*Farmland classification:* Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season

#### Map Unit Composition

*Algiers and similar soils:* 90 percent

*Minor components:* 10 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Algiers

##### Setting

*Landform:* Terraces, flood plains

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Loamy alluvium

##### Typical profile

*H1 - 0 to 16 inches:* silt loam

*H2 - 16 to 48 inches:* silty clay loam

*H3 - 48 to 60 inches:* loam

##### Properties and qualities

*Slope:* 0 to 2 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Somewhat poorly drained

*Runoff class:* Low

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 2.00 in/hr)

*Depth to water table:* About 0 to 18 inches

*Frequency of flooding:* Frequent

*Frequency of ponding:* None

*Calcium carbonate, maximum in profile:* 10 percent

*Available water storage in profile:* High (about 11.0 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2w

*Hydrologic Soil Group:* B/D

*Other vegetative classification:* Unnamed (G111DYC-3OH)

#### Minor Components

##### Sloan

*Percent of map unit:* 5 percent

*Landform:* Swales, oxbows

**Eel**

*Percent of map unit: 5 percent*

*Landform: Flood-plain steps, flood plains*

**Bs—Brookston silty clay loam, fine texture, 0 to 2 percent slopes**

**Map Unit Setting**

*National map unit symbol: 2t98m*

*Elevation: 820 to 1,140 feet*

*Mean annual precipitation: 37 to 46 inches*

*Mean annual air temperature: 48 to 55 degrees F*

*Frost-free period: 145 to 180 days*

*Farmland classification: Prime farmland if drained*

**Map Unit Composition**

*Brookston and similar soils: 90 percent*

*Minor components: 10 percent*

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Brookston**

**Setting**

*Landform: Ground moraines*

*Landform position (two-dimensional): Toeslope*

*Landform position (three-dimensional): Dip*

*Down-slope shape: Linear*

*Across-slope shape: Concave*

*Parent material: Loamy glaciofluvial deposits derived from sedimentary rock over loamy till derived from limestone and dolomite*

**Typical profile**

*Ap - 0 to 12 inches: silty clay loam*

*Btg - 12 to 39 inches: silty clay loam*

*2C - 39 to 60 inches: silt loam*

**Properties and qualities**

*Slope: 0 to 2 percent*

*Depth to restrictive feature: More than 80 inches*

*Natural drainage class: Poorly drained*

*Runoff class: Negligible*

*Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)*

*Depth to water table: About 0 to 12 inches*

*Frequency of flooding: None*

*Frequency of ponding: Frequent*

*Calcium carbonate, maximum in profile: 35 percent*

*Salinity, maximum in profile: Nonsaline (0.0 to 2.0 mmhos/cm)*

*Available water storage in profile: Moderate (about 8.1 inches)*

**Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2w

*Hydrologic Soil Group:* C/D

**Minor Components**

**Crosby**

*Percent of map unit:* 5 percent

*Landform:* Till plains

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Interfluve

*Down-slope shape:* Linear

*Across-slope shape:* Linear

**Celina**

*Percent of map unit:* 5 percent

*Landform:* Till plains

*Landform position (two-dimensional):* Summit, shoulder

*Landform position (three-dimensional):* Crest

*Down-slope shape:* Convex

*Across-slope shape:* Linear

**EmB—Eldean silt loam, 2 to 6 percent slopes**

**Map Unit Setting**

*National map unit symbol:* 5p54

*Elevation:* 670 to 1,160 feet

*Mean annual precipitation:* 29 to 45 inches

*Mean annual air temperature:* 50 to 55 degrees F

*Frost-free period:* 151 to 192 days

*Farmland classification:* All areas are prime farmland

**Map Unit Composition**

*Eldean and similar soils:* 90 percent

*Minor components:* 10 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Eldean**

**Setting**

*Landform:* Kames, outwash terraces, moraines

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Loamy outwash over sandy and gravelly outwash

**Typical profile**

*H1 - 0 to 13 inches:* silt loam

*H2 - 13 to 33 inches:* gravelly clay

## Custom Soil Resource Report

*H3 - 33 to 38 inches: very gravelly sandy loam*

*H4 - 38 to 60 inches: stratified sand to very gravelly loamy coarse sand*

### Properties and qualities

*Slope: 2 to 6 percent*

*Depth to restrictive feature: More than 80 inches*

*Natural drainage class: Well drained*

*Runoff class: Low*

*Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high  
(0.60 to 2.00 in/hr)*

*Depth to water table: More than 80 inches*

*Frequency of flooding: None*

*Frequency of ponding: None*

*Calcium carbonate, maximum in profile: 65 percent*

*Available water storage in profile: Low (about 5.5 inches)*

### Interpretive groups

*Land capability classification (irrigated): None specified*

*Land capability classification (nonirrigated): 2e*

*Hydrologic Soil Group: B*

### Minor Components

#### Ockley

*Percent of map unit: 5 percent*

*Landform: Terraces*

#### Moderately eroded areas

*Percent of map unit: 3 percent*

#### Loam surface layer

*Percent of map unit: 2 percent*

## EmB2—Eldean silt loam, 2 to 6 percent slopes, moderately eroded

### Map Unit Setting

*National map unit symbol: 5p55*

*Elevation: 670 to 1,160 feet*

*Mean annual precipitation: 29 to 40 inches*

*Mean annual air temperature: 50 to 54 degrees F*

*Frost-free period: 151 to 192 days*

*Farmland classification: All areas are prime farmland*

### Map Unit Composition

*Eldean and similar soils: 95 percent*

*Minor components: 5 percent*

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Eldean

#### Setting

*Landform: Kames, outwash terraces, moraines*

## Custom Soil Resource Report

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Loamy outwash over sandy and gravelly outwash

### Typical profile

*H1 - 0 to 13 inches:* silt loam

*H2 - 13 to 33 inches:* gravelly clay loam

*H3 - 33 to 38 inches:* very gravelly sandy loam

*H4 - 38 to 60 inches:* stratified sand to very gravelly loamy coarse sand

### Properties and qualities

*Slope:* 2 to 6 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Runoff class:* Medium

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 2.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum in profile:* 65 percent

*Available water storage in profile:* Low (about 5.5 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2e

*Hydrologic Soil Group:* B

### Minor Components

#### Loam surface layer

*Percent of map unit:* 3 percent

#### Gravelly loam surface layer

*Percent of map unit:* 2 percent

## EmC2—Eldean silt loam, 6 to 12 percent slopes, moderately eroded

### Map Unit Setting

*National map unit symbol:* 5p56

*Elevation:* 670 to 1,160 feet

*Mean annual precipitation:* 29 to 45 inches

*Mean annual air temperature:* 50 to 55 degrees F

*Frost-free period:* 151 to 192 days

*Farmland classification:* Farmland of local importance

### Map Unit Composition

*Eldean and similar soils:* 90 percent

*Minor components:* 10 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

## Description of Eldean

### Setting

*Landform:* Kames, outwash terraces, moraines

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Loamy outwash over sandy and gravelly outwash

### Typical profile

*H1 - 0 to 13 inches:* silt loam

*H2 - 13 to 33 inches:* gravelly clay

*H3 - 33 to 38 inches:* very gravelly sandy loam

*H4 - 38 to 60 inches:* stratified sand to very gravelly loamy coarse sand

### Properties and qualities

*Slope:* 6 to 12 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Runoff class:* Medium

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 2.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum in profile:* 65 percent

*Available water storage in profile:* Low (about 5.5 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 3e

*Hydrologic Soil Group:* B

## Minor Components

### Casco

*Percent of map unit:* 5 percent

*Landform:* Kames, outwash terraces, moraines

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear

*Across-slope shape:* Linear

### Loam or gravelly loam surface

*Percent of map unit:* 3 percent

### Severely eroded areas

*Percent of map unit:* 2 percent

## **MhB2—Miamian silt loam, 2 to 6 percent slopes, eroded**

### **Map Unit Setting**

*National map unit symbol:* 2t98s  
*Elevation:* 520 to 1,550 feet  
*Mean annual precipitation:* 37 to 46 inches  
*Mean annual air temperature:* 48 to 55 degrees F  
*Frost-free period:* 145 to 180 days  
*Farmland classification:* All areas are prime farmland

### **Map Unit Composition**

*Miamian, eroded, and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Miamian, Eroded**

#### **Setting**

*Landform:* Ground moraines, recessional moraines  
*Landform position (two-dimensional):* Shoulder, summit, backslope  
*Landform position (three-dimensional):* Crest, nose slope, head slope, side slope, rise  
*Down-slope shape:* Convex, linear  
*Across-slope shape:* Linear, convex  
*Parent material:* Loess over loamy till

#### **Typical profile**

*Ap - 0 to 9 inches:* silt loam  
*Bt1 - 9 to 12 inches:* silty clay loam  
*2Bt2 - 12 to 24 inches:* clay  
*2BCt - 24 to 33 inches:* loam  
*2Cd - 33 to 79 inches:* loam

#### **Properties and qualities**

*Slope:* 2 to 6 percent  
*Depth to restrictive feature:* 28 to 40 inches to densic material  
*Natural drainage class:* Well drained  
*Runoff class:* Medium  
*Capacity of the most limiting layer to transmit water (Ksat):* Low to moderately high (0.01 to 0.20 in/hr)  
*Depth to water table:* About 30 to 42 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum in profile:* 50 percent  
*Salinity, maximum in profile:* Nonsaline (0.0 to 2.0 mmhos/cm)  
*Available water storage in profile:* Low (about 4.9 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 2e

## Custom Soil Resource Report

*Hydrologic Soil Group: C*

### Minor Components

#### **Kokomo**

*Percent of map unit: 5 percent*  
*Landform: Depressions on till plains*  
*Landform position (two-dimensional): Toeslope*  
*Landform position (three-dimensional): Dip*  
*Down-slope shape: Concave*  
*Across-slope shape: Concave*

#### **Celina, eroded**

*Percent of map unit: 5 percent*  
*Landform: Ground moraines, recessional moraines, water-lain moraines*  
*Landform position (two-dimensional): Summit, shoulder, backslope*  
*Landform position (three-dimensional): Crest, head slope, nose slope, side slope, rise*  
*Down-slope shape: Convex, linear*  
*Across-slope shape: Linear, convex*

#### **Crosby**

*Percent of map unit: 5 percent*  
*Landform: Till plains*  
*Landform position (two-dimensional): Footslope*  
*Landform position (three-dimensional): Interfluvium*  
*Down-slope shape: Linear*  
*Across-slope shape: Linear*

## **MhC2—Miami silt loam, 6 to 12 percent slopes, moderately eroded**

### **Map Unit Setting**

*National map unit symbol: 5p5l*  
*Elevation: 700 to 1,530 feet*  
*Mean annual precipitation: 35 to 45 inches*  
*Mean annual air temperature: 50 to 55 degrees F*  
*Frost-free period: 151 to 180 days*  
*Farmland classification: Farmland of local importance*

### **Map Unit Composition**

*Miamian and similar soils: 90 percent*  
*Minor components: 10 percent*  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Miami**

#### **Setting**

*Landform: Moraines, till plains*  
*Landform position (two-dimensional): Shoulder, footslope*  
*Landform position (three-dimensional): Crest, side slope*  
*Down-slope shape: Convex*

## Custom Soil Resource Report

*Across-slope shape:* Convex

*Parent material:* Loess over loamy till

### Typical profile

*H1 - 0 to 7 inches:* silt loam

*H2 - 7 to 38 inches:* clay loam

*H3 - 38 to 60 inches:* loam

### Properties and qualities

*Slope:* 6 to 12 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Runoff class:* High

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.60 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum in profile:* 50 percent

*Available water storage in profile:* Moderate (about 7.7 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 3e

*Hydrologic Soil Group:* C

*Other vegetative classification:* Unnamed (G111BYA-1OH)

### Minor Components

#### Celina

*Percent of map unit:* 5 percent

*Landform:* Moraines, till plains

*Landform position (two-dimensional):* Summit

*Landform position (three-dimensional):* Interfluve

*Down-slope shape:* Convex

*Across-slope shape:* Linear

#### Severely eroded areas

*Percent of map unit:* 3 percent

#### Shallow gullies

*Percent of map unit:* 2 percent

## MhD2—Miamian silt loam, 12 to 18 percent slopes, moderately eroded

### Map Unit Setting

*National map unit symbol:* 5p5m

*Elevation:* 700 to 1,530 feet

*Mean annual precipitation:* 35 to 45 inches

*Mean annual air temperature:* 50 to 55 degrees F

*Frost-free period:* 151 to 180 days

*Farmland classification:* Farmland of local importance

### Map Unit Composition

*Miamian and similar soils: 90 percent*

*Minor components: 10 percent*

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Miamian

#### Setting

*Landform: Moraines, till plains*

*Landform position (two-dimensional): Footslope*

*Landform position (three-dimensional): Side slope*

*Down-slope shape: Convex*

*Across-slope shape: Convex*

*Parent material: Loess over loamy till*

#### Typical profile

*H1 - 0 to 7 inches: silt loam*

*H2 - 7 to 38 inches: clay loam*

*H3 - 38 to 60 inches: loam*

#### Properties and qualities

*Slope: 12 to 18 percent*

*Depth to restrictive feature: More than 80 inches*

*Natural drainage class: Well drained*

*Runoff class: High*

*Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)*

*Depth to water table: More than 80 inches*

*Frequency of flooding: None*

*Frequency of ponding: None*

*Calcium carbonate, maximum in profile: 50 percent*

*Available water storage in profile: Moderate (about 7.7 inches)*

#### Interpretive groups

*Land capability classification (irrigated): None specified*

*Land capability classification (nonirrigated): 4e*

*Hydrologic Soil Group: C*

*Other vegetative classification: Unnamed (G111BYA-1OH)*

### Minor Components

#### Russell

*Percent of map unit: 5 percent*

*Landform: Till plains*

#### Hennepin

*Percent of map unit: 5 percent*

*Landform: Till plains*

**MmE2—Miamian-Casco complex, 18 to 35 percent slopes, moderately eroded**

**Map Unit Setting**

*National map unit symbol:* 5p5t  
*Elevation:* 340 to 1,530 feet  
*Mean annual precipitation:* 28 to 45 inches  
*Mean annual air temperature:* 46 to 57 degrees F  
*Frost-free period:* 135 to 200 days  
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Miamian and similar soils:* 50 percent  
*Casco and similar soils:* 35 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Miamian**

**Setting**

*Landform:* Kames, moraines  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Loess over loamy till

**Typical profile**

*H1 - 0 to 7 inches:* silt loam  
*H2 - 7 to 38 inches:* clay loam  
*H3 - 38 to 60 inches:* loam

**Properties and qualities**

*Slope:* 18 to 35 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Well drained  
*Runoff class:* Very high  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.60 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum in profile:* 50 percent  
*Available water storage in profile:* Moderate (about 7.7 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7e  
*Hydrologic Soil Group:* C

## Description of Casco

### Setting

*Landform:* Kames, moraines  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Loamy alluvium over sandy and gravelly outwash

### Typical profile

*H1 - 0 to 4 inches:* loam  
*H2 - 4 to 20 inches:* clay loam  
*H3 - 20 to 60 inches:* Error

### Properties and qualities

*Slope:* 18 to 35 percent  
*Depth to restrictive feature:* 10 to 24 inches to strongly contrasting textural stratification  
*Natural drainage class:* Well drained  
*Runoff class:* High  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 2.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum in profile:* 25 percent  
*Available water storage in profile:* Very low (about 2.4 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7e  
*Hydrologic Soil Group:* B

## Minor Components

### Rodman

*Percent of map unit:* 10 percent  
*Landform:* Terraces

### Silt loam surface layer

*Percent of map unit:* 5 percent

## MrB—Miamian-Urban land complex, undulating

### Map Unit Setting

*National map unit symbol:* 5p5z  
*Elevation:* 700 to 1,530 feet  
*Mean annual precipitation:* 35 to 45 inches  
*Mean annual air temperature:* 50 to 55 degrees F

## Custom Soil Resource Report

*Frost-free period:* 151 to 180 days

*Farmland classification:* Not prime farmland

### Map Unit Composition

*Miamian and similar soils:* 40 percent

*Urban land:* 15 percent

*Minor components:* 45 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Miamian

#### Setting

*Landform:* Till plains

*Landform position (two-dimensional):* Summit

*Landform position (three-dimensional):* Interfluve

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Parent material:* Loess over loamy till

#### Typical profile

*H1 - 0 to 7 inches:* clay loam

*H2 - 7 to 38 inches:* clay loam

*H3 - 38 to 60 inches:* loam

#### Properties and qualities

*Slope:* 2 to 6 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Runoff class:* Medium

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.60 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum in profile:* 50 percent

*Available water storage in profile:* Moderate (about 7.7 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Hydrologic Soil Group:* C

*Other vegetative classification:* Unnamed (G111BYA-1OH)

### Minor Components

#### Fill areas

*Percent of map unit:* 25 percent

#### Birkbeck

*Percent of map unit:* 5 percent

*Landform:* Till plains

#### Celina

*Percent of map unit:* 5 percent

*Landform:* Moraines, till plains

*Landform position (two-dimensional):* Summit

*Landform position (three-dimensional):* Interfluve

*Down-slope shape:* Convex

*Across-slope shape:* Linear

**Russell**

*Percent of map unit: 5 percent*

*Landform: Till plains*

**Xenia**

*Percent of map unit: 5 percent*

*Landform: Till plains*

**MtA—Milton silt loam, 0 to 2 percent slopes**

**Map Unit Setting**

*National map unit symbol: 5p62*

*Elevation: 800 to 1,000 feet*

*Mean annual precipitation: 27 to 45 inches*

*Mean annual air temperature: 45 to 55 degrees F*

*Frost-free period: 155 to 210 days*

*Farmland classification: All areas are prime farmland*

**Map Unit Composition**

*Milton and similar soils: 95 percent*

*Minor components: 5 percent*

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Milton**

**Setting**

*Landform: Till plains*

*Landform position (two-dimensional): Summit*

*Landform position (three-dimensional): Interfluve*

*Down-slope shape: Convex*

*Across-slope shape: Linear*

*Parent material: Loess over till over residuum weathered from limestone*

**Typical profile**

*H1 - 0 to 6 inches: silt loam*

*H2 - 6 to 30 inches: silty clay loam*

*H3 - 30 to 32 inches: unweathered bedrock*

**Properties and qualities**

*Slope: 0 to 2 percent*

*Depth to restrictive feature: 20 to 40 inches to lithic bedrock*

*Natural drainage class: Well drained*

*Runoff class: High*

*Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)*

*Depth to water table: More than 80 inches*

*Frequency of flooding: None*

*Frequency of ponding: None*

*Calcium carbonate, maximum in profile: 15 percent*

*Available water storage in profile: Low (about 4.7 inches)*

**Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2s

*Hydrologic Soil Group:* C

**Minor Components**

**Miamian**

*Percent of map unit:* 5 percent

*Landform:* Till plains

**MtB—Milton silt loam, 2 to 6 percent slopes**

**Map Unit Setting**

*National map unit symbol:* 5p63

*Elevation:* 800 to 1,000 feet

*Mean annual precipitation:* 27 to 45 inches

*Mean annual air temperature:* 45 to 55 degrees F

*Frost-free period:* 155 to 210 days

*Farmland classification:* All areas are prime farmland

**Map Unit Composition**

*Milton and similar soils:* 90 percent

*Minor components:* 10 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Milton**

**Setting**

*Landform:* Till plains

*Landform position (two-dimensional):* Shoulder

*Landform position (three-dimensional):* Crest

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Loess over till over residuum weathered from limestone

**Typical profile**

*H1 - 0 to 6 inches:* silt loam

*H2 - 6 to 30 inches:* silty clay loam

*H3 - 30 to 32 inches:* unweathered bedrock

**Properties and qualities**

*Slope:* 2 to 6 percent

*Depth to restrictive feature:* 20 to 40 inches to lithic bedrock

*Natural drainage class:* Well drained

*Runoff class:* High

*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.06 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

## Custom Soil Resource Report

*Frequency of ponding:* None  
*Calcium carbonate, maximum in profile:* 15 percent  
*Available water storage in profile:* Low (about 4.7 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 2e  
*Hydrologic Soil Group:* C

### Minor Components

#### Miamian

*Percent of map unit:* 5 percent  
*Landform:* Till plains

#### Moderately eroded areas

*Percent of map unit:* 3 percent

#### Limestone fragments on the surface

*Percent of map unit:* 2 percent

## OcB—Ockley silt loam, Southern Ohio Till Plain, 2 to 6 percent slopes

### Map Unit Setting

*National map unit symbol:* 2t4ln  
*Elevation:* 400 to 1,300 feet  
*Mean annual precipitation:* 37 to 46 inches  
*Mean annual air temperature:* 48 to 55 degrees F  
*Frost-free period:* 155 to 180 days  
*Farmland classification:* All areas are prime farmland

### Map Unit Composition

*Ockley and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Ockley

#### Setting

*Landform:* Outwash terraces  
*Landform position (two-dimensional):* Shoulder  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Loess over loamy outwash over sandy and gravelly outwash

#### Typical profile

*Ap - 0 to 10 inches:* silt loam  
*2Bt1 - 10 to 41 inches:* clay loam  
*2Bt2 - 41 to 66 inches:* gravelly clay loam  
*3C - 66 to 79 inches:* gravelly loamy coarse sand

**Properties and qualities**

*Slope:* 2 to 6 percent

*Depth to restrictive feature:* 40 to 70 inches to strongly contrasting textural stratification

*Natural drainage class:* Well drained

*Runoff class:* Low

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 2.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum in profile:* 50 percent

*Salinity, maximum in profile:* Nonsaline (0.0 to 2.0 mmhos/cm)

*Available water storage in profile:* High (about 9.7 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2e

*Hydrologic Soil Group:* B

**Minor Components**

**Eldean**

*Percent of map unit:* 5 percent

*Landform:* Outwash terraces

*Landform position (two-dimensional):* Shoulder, backslope

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear

*Across-slope shape:* Linear

**Sleeth**

*Percent of map unit:* 5 percent

*Landform:* Stream terraces, outwash terraces

*Landform position (two-dimensional):* Shoulder, backslope

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear

*Across-slope shape:* Linear

**Fox**

*Percent of map unit:* 5 percent

*Landform:* Outwash plains, terraces

*Landform position (two-dimensional):* Summit

*Landform position (three-dimensional):* Tread, talf

*Down-slope shape:* Convex

*Across-slope shape:* Linear

**Pa—Patton silty clay loam**

**Map Unit Setting**

*National map unit symbol:* 5p6b

## Custom Soil Resource Report

*Elevation:* 300 to 450 feet  
*Mean annual precipitation:* 35 to 48 inches  
*Mean annual air temperature:* 50 to 57 degrees F  
*Frost-free period:* 160 to 225 days  
*Farmland classification:* Prime farmland if drained

### Map Unit Composition

*Patton and similar soils:* 90 percent  
*Minor components:* 10 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Patton

#### Setting

*Landform:* Depressions on lake plains  
*Parent material:* Silty lacustrine deposits

#### Typical profile

*H1 - 0 to 8 inches:* silty clay loam  
*H2 - 8 to 32 inches:* silty clay loam  
*H3 - 32 to 60 inches:* stratified silt loam to silty clay loam

#### Properties and qualities

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Very poorly drained  
*Runoff class:* Medium  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.60 in/hr)  
*Depth to water table:* About 0 to 12 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* Frequent  
*Calcium carbonate, maximum in profile:* 25 percent  
*Available water storage in profile:* High (about 9.1 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 2w  
*Hydrologic Soil Group:* C/D

### Minor Components

#### Westland

*Percent of map unit:* 5 percent  
*Landform:* Outwash plains, stream terraces, glacial drainage channels  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear

#### Silt loam subsoil

*Percent of map unit:* 5 percent  
*Landform:* Depressions on lake plains

## **XeB—Xenia silt loam, 2 to 6 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 5p7c  
*Elevation:* 650 to 1,020 feet  
*Mean annual precipitation:* 28 to 45 inches  
*Mean annual air temperature:* 48 to 55 degrees F  
*Frost-free period:* 130 to 180 days  
*Farmland classification:* All areas are prime farmland

### **Map Unit Composition**

*Xenia and similar soils:* 75 percent  
*Minor components:* 25 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Xenia**

#### **Setting**

*Landform:* Till plains  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Interfluvium  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Parent material:* Loess over loamy till

#### **Typical profile**

*H1 - 0 to 8 inches:* silt loam  
*H2 - 8 to 34 inches:* silty clay loam  
*H3 - 34 to 60 inches:* loam

#### **Properties and qualities**

*Slope:* 2 to 6 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Moderately well drained  
*Runoff class:* Low  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.60 in/hr)  
*Depth to water table:* About 24 to 36 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum in profile:* 50 percent  
*Available water storage in profile:* Moderate (about 8.1 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 2e  
*Hydrologic Soil Group:* C  
*Other vegetative classification:* Unnamed (G111DYA-6OH)

**Minor Components**

**Birkbeck**

*Percent of map unit:* 5 percent

*Landform:* Till plains

**Fincastle**

*Percent of map unit:* 5 percent

*Landform:* Till plains

**Moderately eroded areas**

*Percent of map unit:* 5 percent

**Ragsdale**

*Percent of map unit:* 5 percent

*Landform:* Depressions, drainageways

**Russell**

*Percent of map unit:* 5 percent


*Landform:* Till plains

Custom Soil Resource Report  
Map—Depth to Any Soil Restrictive Layer (GRQ-04-01 (Mc87))










## MAP LEGEND

### Area of Interest (AOI)








 Area of Interest (AOI)

### Soils







#### Soil Rating Polygons


-  0 - 25
-  25 - 50
-  50 - 100
-  100 - 150
-  150 - 200
-  > 200
-  Not rated or not available

#### Soil Rating Lines

-  0 - 25
-  25 - 50
-  50 - 100
-  100 - 150
-  150 - 200
-  > 200
-  Not rated or not available

#### Soil Rating Points

-  0 - 25
-  25 - 50
-  50 - 100
-  100 - 150
-  150 - 200
-  > 200

 Not rated or not available

### Water Features

 Streams and Canals

### Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>  
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Greene County, Ohio  
Survey Area Data: Version 11, Sep 18, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 30, 2010—Mar 10, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

**Table—Depth to Any Soil Restrictive Layer (GRQ-04-01 (Mc87))**

Depth to Any Soil Restrictive Layer— Summary by Map Unit — Greene County, Ohio (OH057)				
Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
Ag	Algiers silt loam	>200	3.5	4.2%
Bs	Brookston silty clay loam, fine texture, 0 to 2 percent slopes	>200	0.0	0.0%
EmB	Eldean silt loam, 2 to 6 percent slopes	>200	0.1	0.1%
EmB2	Eldean silt loam, 2 to 6 percent slopes, moderately eroded	>200	7.0	8.5%
EmC2	Eldean silt loam, 6 to 12 percent slopes, moderately eroded	>200	1.6	2.0%
MhB2	Miamian silt loam, 2 to 6 percent slopes, eroded	84	4.8	5.9%
MhC2	Miamian silt loam, 6 to 12 percent slopes, moderately eroded	>200	4.1	5.0%
MhD2	Miamian silt loam, 12 to 18 percent slopes, moderately eroded	>200	7.8	9.5%
MmE2	Miamian-Casco complex, 18 to 35 percent slopes, moderately eroded	>200	3.5	4.3%
MrB	Miamian-Urban land complex, undulating	>200	2.3	2.8%
MtA	Milton silt loam, 0 to 2 percent slopes	76	0.5	0.6%
MtB	Milton silt loam, 2 to 6 percent slopes	76	3.0	3.7%
OcB	Ockley silt loam, Southern Ohio Till Plain, 2 to 6 percent slopes	168	17.9	21.7%
Pa	Patton silty clay loam	>200	16.7	20.2%
XeB	Xenia silt loam, 2 to 6 percent slopes	>200	9.5	11.5%
<b>Totals for Area of Interest</b>			<b>82.3</b>	<b>100.0%</b>


**Rating Options—Depth to Any Soil Restrictive Layer (GRQ-04-01 (Mc87))***Units of Measure:* centimeters*Aggregation Method:* Dominant Component*Component Percent Cutoff:* None Specified

Custom Soil Resource Report  
Map—Hydrologic Soil Group (GRQ-04-01 (Mc87))











## MAP LEGEND

### Area of Interest (AOI)









 Area of Interest (AOI)

### Soils





#### Soil Rating Polygons





 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

#### Soil Rating Lines


 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

#### Soil Rating Points

 A  
 A/D  
 B  
 B/D

 C  
 C/D  
 D  
 Not rated or not available

### Water Features

 Streams and Canals

### Transportation

 Rails  
 Interstate Highways  
 US Routes  
 Major Roads  
 Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

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Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Greene County, Ohio  
 Survey Area Data: Version 11, Sep 18, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

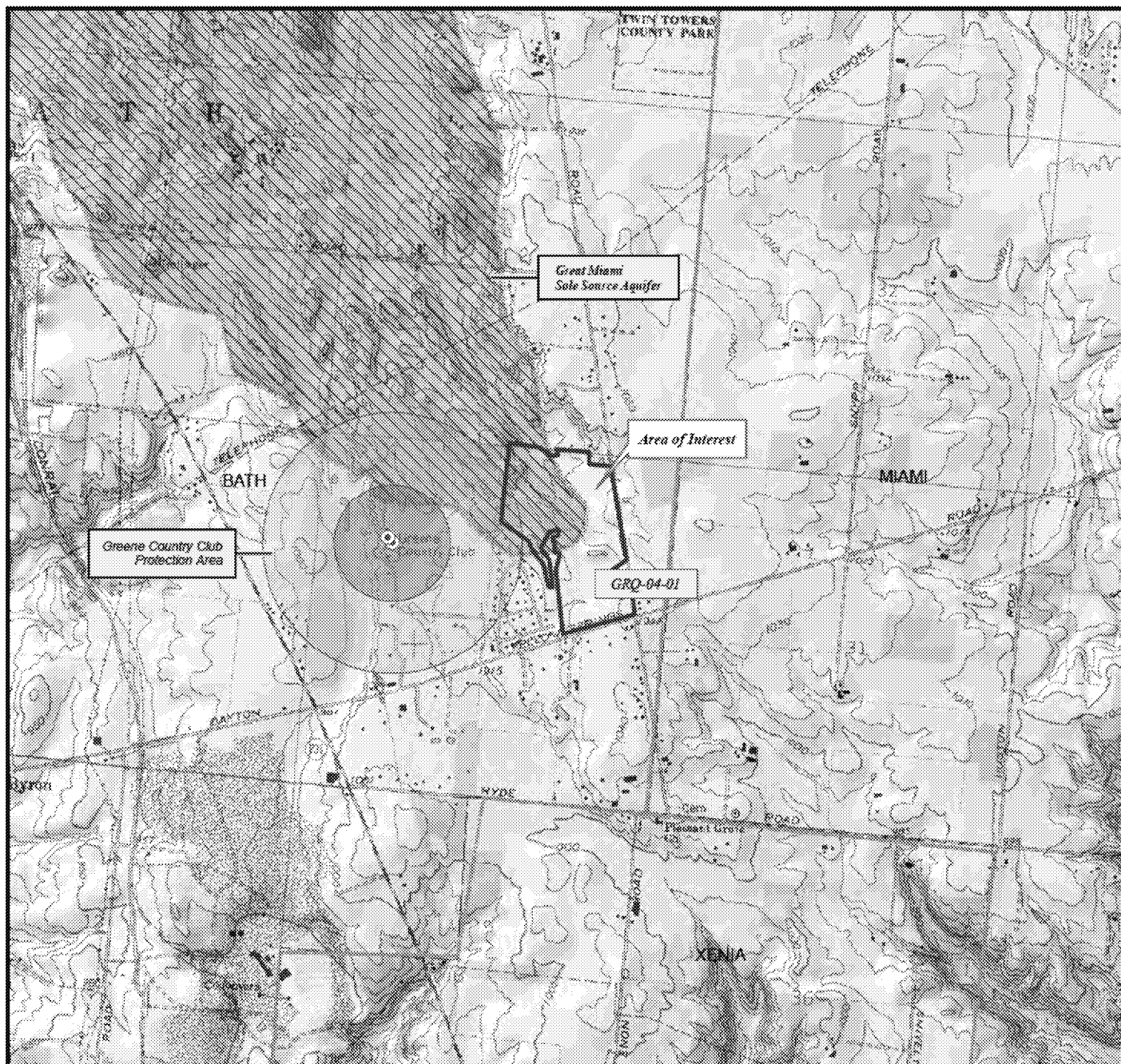
Date(s) aerial images were photographed: Sep 30, 2010—Mar 10, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

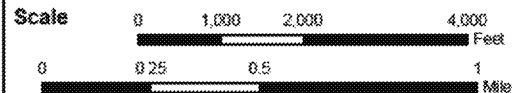
**Table—Hydrologic Soil Group (GRQ-04-01 (Mc87))**

Hydrologic Soil Group— Summary by Map Unit — Greene County, Ohio (OH057)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Ag	Algiers silt loam	B/D	3.5	4.2%
Bs	Brookston silty clay loam, fine texture, 0 to 2 percent slopes	C/D	0.0	0.0%
EmB	Eldean silt loam, 2 to 6 percent slopes	B	0.1	0.1%
EmB2	Eldean silt loam, 2 to 6 percent slopes, moderately eroded	B	7.0	8.5%
EmC2	Eldean silt loam, 6 to 12 percent slopes, moderately eroded	B	1.6	2.0%
MhB2	Miamian silt loam, 2 to 6 percent slopes, eroded	C	4.8	5.9%
MhC2	Miamian silt loam, 6 to 12 percent slopes, moderately eroded	C	4.1	5.0%
MhD2	Miamian silt loam, 12 to 18 percent slopes, moderately eroded	C	7.8	9.5%
MmE2	Miamian-Casco complex, 18 to 35 percent slopes, moderately eroded	C	3.5	4.3%
MrB	Miamian-Urban land complex, undulating		2.3	2.8%
MtA	Milton silt loam, 0 to 2 percent slopes	C	0.5	0.6%
MtB	Milton silt loam, 2 to 6 percent slopes	C	3.0	3.7%
OcB	Ockley silt loam, Southern Ohio Till Plain, 2 to 6 percent slopes	B	17.9	21.7%
Pa	Patton silty clay loam	C/D	16.7	20.2%
XeB	Xenia silt loam, 2 to 6 percent slopes	C	9.5	11.5%
<b>Totals for Area of Interest</b>			<b>82.3</b>	<b>100.0%</b>

**Rating Options—Hydrologic Soil Group (GRQ-04-01 (Mc87))***Aggregation Method: Dominant Condition**Component Percent Cutoff: None Specified**Tie-break Rule: Higher*



**Sole Source Aquifers, Public Water System Wells and Drinking Water Source Protection Areas in Northern Xenia, Eastern Bath and Western Miami Townships, Green County**



**EXPLANATION**



Sole Source Aquifer



Public Water System Well



Public Water System Intake

**Drinking Water Source Protection Areas - Ground Water**



Protection Area (Outer line = 5-year time-of-travel)

Inner Management Zone (Inner line = 1-year time-of-travel)

**Drinking Water Source Protection Areas - Surface Water**



Corridor Management Zone

Emergency Management Zone



Critical Assessment Zone  
(Lake Erie systems only)



Zone of Critical Concern  
(Ohio River systems only)



Potential Influence Zone  
(Lake Erie systems only)

Label text reflects system type as defined in Chapter 3745-81-01 of the Ohio Administrative Code as noted below

Community Water System

Non-Transient, Non-Community Water System

Transient, Non-Community Water System

USGS 7.5 Minute Quadrangle Topographic Maps: Yellow Springs (1978)

Site Location Provided by: quasar energy group  
Map created on March 26, 2015, by Craig Smith



Division of Drinking and Ground Waters

## Current View

Grower: Pitstick Pork Farms

Acres: 88.90

Farm: [REDACTED]

Crop Zone:

Field:

Crop Year:



Location:

County: Greene, OH

Twp Rng Sec:

Directions:

Prepared For: Pitstick, Tom

Farm: Exemption 6

Field:

Crop Zone:

Crop Year: 2013

Acres: 0.00

County: Greene, OH

Twp Rng Sec:

Directions:

Layer Name: Soil Test 2013

Date Sampled: February 26, 2013

SampleID	LabID	OM	P	K	Mg	Ca	CEC	pH	BpH	Ca %	Mg %	K %	Su	Bo	Zn	Mn	Fe	Cu
	none	%	ppm	ppm	ppm	ppm	meq/100g	unit	unit	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm
1	E40254	1.6	7	124	408	1478	10.3	6.9	7.1	53.8	29.1	2.6						
2	E40255	3.0	9	111	629	2876	16.4	7.2		65.7	28.1	1.5						
3	E40256	1.3	13	81	181	724	9.0	5.4	6.6	30.1	14.7	1.9						
4	E40257	1.2	12	132	226	838	11.1	5.3	6.5	28.4	15.0	2.6						
5	E40258	2.1	13	139	706	2015	13.0	7.4		58.0	39.7	2.3						
6	E40259	1.5	13	76	254	1324	8.2	6.1	6.9	60.6	22.7	2.0						
7	E40260	1.6	8	101	392	1279	10.1	6.5	7.0	47.5	28.5	2.2						
8	E40261	1.5	8	77	442	1703	10.8	7.1		59.3	30.1	1.5						
9	E40262	5.7	17	185	893	5271	25.2	7.0		59.4	25.9	1.6						
10	E40263	3.2	20	148	631	4097	19.9	7.7		75.2	23.2	1.6						
11	E40264	1.9	30	81	279	1318	7.2	6.3	7.0	69.0	28.6	2.4						
12	E40265	1.1	34	142	58	292	9.0	5.2	6.4	12.1	4.7	3.4						
13	E40266	1.5	13	73	245	1083	7.2	6.0	6.9	56.3	24.9	2.2						

Layer Name: Soil Test 2013

Date Sampled: February 26, 2013

SampleID	LabID none	OM %	P ppm	K ppm	Mg ppm	Ca ppm	CEC meq/100g	pH unit	BpH unit	Ca % %	Mg % %	K % %	Su ppm	Bo ppm	Zn ppm	Mn ppm	Fe ppm	Cu ppm
14	E4026 7	1.6	8	125	460	1602	10.9	6.2	6.9	55.4	31.1	2.5						
15	E4026 8	1.2	11	109	542	2482	13.5	7.8		68.9	29.4	1.7						
16	E4026 9	1.2	12	117	318	1145	6.9	6.4	7.0	62.4	33.9	3.7						
17	E4027 0	2.2	18	145	609	2231	13.1	7.7		63.6	34.0	2.4						
18	E4027 1	1.8	11	85	464	1794	11.9	7.0		56.7	28.7	1.5						
19	E4027 2	1.2	13	103	378	1181	9.5	6.5	7.0	46.6	29.2	2.3						
20	E4027 3	1.2	19	67	259	862	7.7	6.1	6.8	42.1	24.7	1.9						
21	E4027 4	2.3	10	141	688	2153	13.4	7.7		60.1	37.6	2.3						
22	E4027 5	1.6	23	148	159	800	5.7	5.7	6.9	52.8	20.5	5.6						
23	E4027 6	1.9	19	100	154	546	9.4	5.2	6.5	21.8	12.0	2.3						
24	E4027 7	1.4	13	58	166	946	7.3	5.7	6.8	48.7	16.7	1.7						
Average:		1.9	15	111	398	1668	11.1	6.5	6.8	52.3	25.5	2.3						

Division of Surface Water  
Application for Authorization  
Class B Beneficial Use Sites

Form BUA-2

Owner Consent for Beneficial Use

Exemption 6

Certification Statement

1. I agree to allow biosolids generated by the treatment plant identified on Form BUA-1 to be beneficially used on my property at agronomic rates.
2. I agree to allow federal, state and local regulatory staff access to the beneficial use site for the purposes of inspecting and authorizing the beneficial use site, beneficially using biosolids, and collecting and analyzing samples from the beneficial use site. I reserve the right to ask the above parties for proper identification at any time.
3. I certify that I am holder of legal title to the property described on application form BUA-4, or am authorized by the holder to give consent for the land application of biosolids, and that there are no restrictions to the granting of consent under this form.

Exemption 6

11, 24, 2014  
Date

In the event the owner of the beneficial use site changes, Form BUA-2 must be revised and resubmitted to Ohio EPA.



GRQ-05-02 (GH40)

GRQ-05-03 (GH13N)

GRQ-05-04 (GH28)

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Google earth

Division of Surface Water  
Application for Authorization  
Class B Beneficial Use Sites

Form BUA-4 Page 1 of 2

Beneficial Use Site Information

Ohio EPA Site I.D. (Ohio EPA Use Only)

Field site I.D.: GRQ-05-02 (GH40)	
Beneficial use site location: NE Corner of Armstrong Rd. and Black Ln.	
County: Greene	Township: Bath
Latitude: 39°50'14.59"N	Longitude: 83°59'4.18"W

Total acreage proposed for beneficial use: 64															
Soil pH (s.u.): 7.2	Soil phosphorus (mg/kg): 25.9														
Bedrock depth (feet): >3ft	Bray Kurtz P1 <input checked="" type="checkbox"/> Mehlich 3 <input type="checkbox"/>														
Type of crops to be grown:															
<table border="1"><thead><tr><th>Crop Type</th><th>Expected Yield</th></tr></thead><tbody><tr><td>Corn</td><td>200 bu</td></tr><tr><td>Soybeans</td><td>50 bu</td></tr><tr><td>Wheat</td><td></td></tr><tr><td>Pasture</td><td></td></tr><tr><td>Hay</td><td></td></tr><tr><td>Other:</td><td></td></tr></tbody></table>		Crop Type	Expected Yield	Corn	200 bu	Soybeans	50 bu	Wheat		Pasture		Hay		Other:	
Crop Type	Expected Yield														
Corn	200 bu														
Soybeans	50 bu														
Wheat															
Pasture															
Hay															
Other:															

**Division of Surface Water**  
Application for Authorization  
Class B Beneficial Use Sites

Soil Types:

Soil Unit Symbol	Soil Unit Name	Hydrologic Soil Group
EmB2	Eldean silt loam, 2-6% slopes, moderately eroded	B
EmC2	Eldean silt loam, 6-12% slopes, moderately eroded	B
Ws	Westland silty clay loam	C/D

Are any endangered species or endangered species habitats located on the beneficial use site?

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
------------------------------	--

If "Yes" is marked, list the types of endangered species or endangered species habitat:

--	--

Have biosolids been beneficially used on the site since July 20, 1993?

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
------------------------------	--

If "Yes" is marked, list the biosolids generators and years beneficial use occurred:

Generator	Year of Beneficial Use

The application must also include all of the following.

- A soil map of the proposed beneficial use site.
- An aerial map of the proposed beneficial use site that clearly identifies the entrance of the beneficial use site from the nearest road and all applicable isolation distances as established in Chapter 3745-40 of the Ohio Administrative Code.
- A vicinity road map at or near the township level that clearly identifies the proposed beneficial use site with all roads labeled.
- A copy of the most recent soil test results identified in this form.

# GRQ-05-02 (GH40)



0 190 380 760 1,140 1,520 Feet

- Watercourse
- Residences
- 100ftbuffer
- 300ftbuffer
- 33ftbuffer

## GRQ-05-02 (GH40)



0 190 380 760 1,140 1,520 Feet

— 5ft\_contours


# Custom Soil Resource Report Soil Map




## Custom Soil Resource Report


### MAP LEGEND

#### Area of Interest (AOI)

 Area of Interest (AOI)


#### Soils


 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

#### Special Point Features

 Blowout


 Borrow Pit


 Clay Spot


 Closed Depression


 Gravel Pit


 Gravelly Spot

 Landfill


 Lava Flow

 Marsh or swamp


 Mine or Quarry


 Miscellaneous Water


 Perennial Water

 Rock Outcrop


 Saline Spot


 Sandy Spot

 Severely Eroded Spot


 Sinkhole


 Slide or Slip

 Sodic Spot


 Spoil Area

 Stony Spot


 Very Stony Spot

 Wet Spot


 Other


 Special Line Features


#### Water Features


 Streams and Canals


#### Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

#### Background

 Aerial Photography

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>  
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Greene County, Ohio  
Survey Area Data: Version 11, Sep 18, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 30, 2010—Mar 10, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Greene County, Ohio (OH057)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
EmB2	Eldean silt loam, 2 to 6 percent slopes, moderately eroded	9.5	15.1%
EmC2	Eldean silt loam, 6 to 12 percent slopes, moderately eroded	21.5	34.3%
Ws	Westland silty clay loam	31.7	50.6%
<b>Totals for Area of Interest</b>		<b>62.6</b>	<b>100.0%</b>

## Map Unit Descriptions

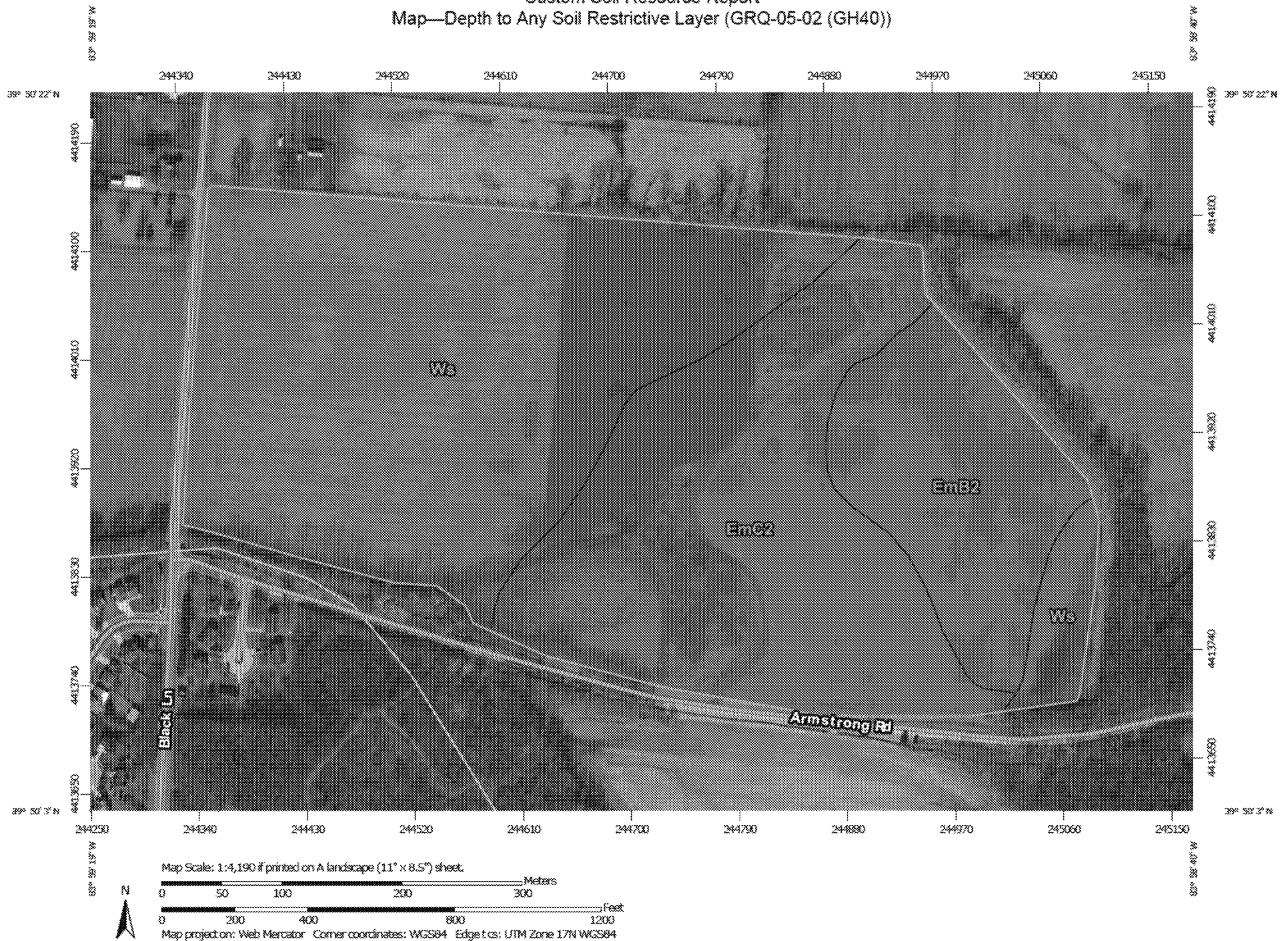
The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.






























Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If

Custom Soil Resource Report  
Map—Depth to Any Soil Restrictive Layer (GRQ-05-02 (GH40))



## MAP LEGEND

<b>Area of Interest (AOI)</b>	 Area of Interest (AOI)	 Not rated or not available
<b>Soils</b>		<b>Water Features</b>
<b>Soil Rating Polygons</b>		 Streams and Canals
 0 - 25		<b>Transportation</b>
 25 - 50		 Rails
 50 - 100		 Interstate Highways
 100 - 150		 US Routes
 150 - 200		 Major Roads
 > 200		 Local Roads
 Not rated or not available		<b>Background</b>
		 Aerial Photography
<b>Soil Rating Lines</b>		
 0 - 25		
 25 - 50		
 50 - 100		
 100 - 150		
 150 - 200		
 > 200		
 Not rated or not available		
<b>Soil Rating Points</b>		
 0 - 25		
 25 - 50		
 50 - 100		
 100 - 150		
 150 - 200		
 > 200		

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

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Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>  
Coordinate System: Web Mercator (EPSG:3857)

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Survey Area Data: Version 11, Sep 18, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 30, 2010—Mar 10, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

**Table—Depth to Any Soil Restrictive Layer (GRQ-05-02 (GH40))**

Depth to Any Soil Restrictive Layer— Summary by Map Unit — Greene County, Ohio (OH057)				
Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
EmB2	Eldean silt loam, 2 to 6 percent slopes, moderately eroded	>200	9.5	15.1%
EmC2	Eldean silt loam, 6 to 12 percent slopes, moderately eroded	>200	21.5	34.3%
Ws	Westland silty clay loam	>200	31.7	50.6%
<b>Totals for Area of Interest</b>			<b>62.6</b>	<b>100.0%</b>

### **Rating Options—Depth to Any Soil Restrictive Layer (GRQ-05-02 (GH40))**

*Units of Measure:* centimeters

*Aggregation Method:* Dominant Component

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Lower

*Interpret Nulls as Zero:* No

### **Hydrologic Soil Group (GRQ-05-02 (GH40))**

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

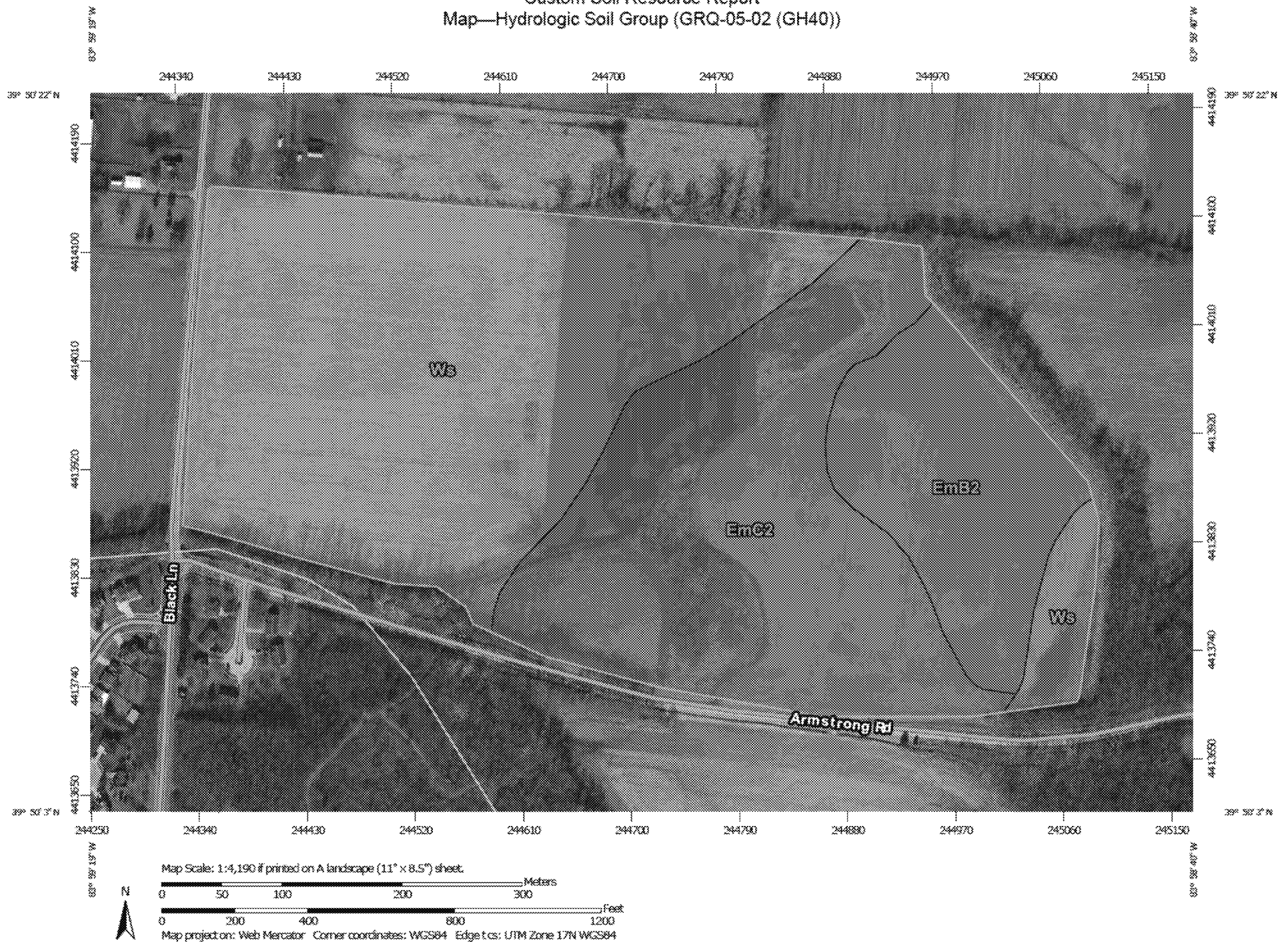
The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.


Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils

Custom Soil Resource Report  
Map—Hydrologic Soil Group (GRQ-05-02 (GH40))











## MAP LEGEND

### Area of Interest (AOI)









 Area of Interest (AOI)

### Soils





#### Soil Rating Polygons





 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

#### Soil Rating Lines


 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

#### Soil Rating Points

 A  
 A/D  
 B  
 B/D

 C  
 C/D  
 D  
 Not rated or not available

### Water Features

 Streams and Canals

### Transportation

 Rails  
 Interstate Highways  
 US Routes  
 Major Roads  
 Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

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Please rely on the bar scale on each map sheet for map measurements.

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**Table—Hydrologic Soil Group (GRQ-05-02 (GH40))**

Hydrologic Soil Group— Summary by Map Unit — Greene County, Ohio (OH057)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
EmB2	Eldean silt loam, 2 to 6 percent slopes, moderately eroded	B	9.5	15.1%
EmC2	Eldean silt loam, 6 to 12 percent slopes, moderately eroded	B	21.5	34.3%
Ws	Westland silty clay loam	C/D	31.7	50.6%
<b>Totals for Area of Interest</b>			<b>62.6</b>	<b>100.0%</b>

**Rating Options—Hydrologic Soil Group (GRQ-05-02 (GH40))**

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher

Division of Surface Water  
Application for Authorization  
Class B Beneficial Use Sites

Form BUA-4 Page 1 of 2

Beneficial Use Site Information

Ohio EPA Site I.D. (Ohio EPA Use Only)

Field site I.D.: GRQ-05-03 (GH13N)	
Beneficial use site location: 0.5 miles east of Black Ln., 0.2 miles N of Armstrong Rd.	
County: Greene	Township: Bath
Latitude: 39°50'14.33"N	Longitude: 83°58'41.83"W

Total acreage proposed for beneficial use: 11.5															
Soil pH (s.u.): 5.8	Soil phosphorus (mg/kg): 12														
Bedrock depth (feet): >3ft	Bray Kurtz P1 <input checked="" type="checkbox"/> Mehlich 3 <input type="checkbox"/>														
Type of crops to be grown:															
<table border="1"><thead><tr><th>Crop Type</th><th>Expected Yield</th></tr></thead><tbody><tr><td>Corn</td><td>200 bu</td></tr><tr><td>Soybeans</td><td>50 bu</td></tr><tr><td>Wheat</td><td></td></tr><tr><td>Pasture</td><td></td></tr><tr><td>Hay</td><td></td></tr><tr><td>Other:</td><td></td></tr></tbody></table>		Crop Type	Expected Yield	Corn	200 bu	Soybeans	50 bu	Wheat		Pasture		Hay		Other:	
Crop Type	Expected Yield														
Corn	200 bu														
Soybeans	50 bu														
Wheat															
Pasture															
Hay															
Other:															

**Division of Surface Water**  
Application for Authorization  
Class B Beneficial Use Sites

Soil Types:

Soil Unit Symbol	Soil Unit Name	Hydrologic Soil Group
EmB2	Eldean silt loam, 2-6% slopes, moderately eroded	B
MUF	Milton soils, channery variant, 25-50% slopes	C
Ws	Westland silty clay loam	C/D

Are any endangered species or endangered species habitats located on the beneficial use site?

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
------------------------------	--

If "Yes" is marked, list the types of endangered species or endangered species habitat:

--	--

Have biosolids been beneficially used on the site since July 20, 1993?

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
------------------------------	--

If "Yes" is marked, list the biosolids generators and years beneficial use occurred:

Generator	Year of Beneficial Use

The application must also include all of the following.

- A soil map of the proposed beneficial use site.
- An aerial map of the proposed beneficial use site that clearly identifies the entrance of the beneficial use site from the nearest road and all applicable isolation distances as established in Chapter 3745-40 of the Ohio Administrative Code.
- A vicinity road map at or near the township level that clearly identifies the proposed beneficial use site with all roads labeled.
- A copy of the most recent soil test results identified in this form.

# GRQ-05-03 (GH13N)



0 150 300 600 900 1,200 Feet

- Watercourse
- Residences
- 100ftbuffer
- 300ftbuffer
- 33ftbuffer

# GRQ-05-03 (GH13N)



0 150 300 600 900 1,200 Feet

— 5ft\_contours


# Custom Soil Resource Report Soil Map



## Custom Soil Resource Report


### MAP LEGEND

#### Area of Interest (AOI)

 Area of Interest (AOI)


#### Soils


 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

#### Special Point Features

 Blowout


 Borrow Pit


 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill


 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water


 Perennial Water

 Rock Outcrop

 Saline Spot


 Sandy Spot


 Severely Eroded Spot


 Sinkhole


 Slide or Slip


 Sodic Spot


 Spoil Area

 Stony Spot


 Very Stony Spot

 Wet Spot

 Other


 Special Line Features

#### Water Features

 Streams and Canals


#### Transportation

 Rails


 Interstate Highways

 US Routes

 Major Roads

 Local Roads

#### Background

 Aerial Photography

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

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Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>  
Coordinate System: Web Mercator (EPSG:3857)

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Survey Area Data: Version 11, Sep 18, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 30, 2010—Mar 10, 2012

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## Map Unit Legend

Greene County, Ohio (OH057)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
EmB2	Eldean silt loam, 2 to 6 percent slopes, moderately eroded	8.5	76.4%
MUF	Milton soils, channery variant, 25 to 50 percent slopes	0.0	0.3%
Ws	Westland silty clay loam	2.6	23.3%
<b>Totals for Area of Interest</b>		<b>11.1</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If

## Greene County, Ohio

### EmB2—Eldean silt loam, 2 to 6 percent slopes, moderately eroded

#### Map Unit Setting

*National map unit symbol:* 5p55  
*Elevation:* 670 to 1,160 feet  
*Mean annual precipitation:* 29 to 40 inches  
*Mean annual air temperature:* 50 to 54 degrees F  
*Frost-free period:* 151 to 192 days  
*Farmland classification:* All areas are prime farmland

#### Map Unit Composition

*Eldean and similar soils:* 95 percent  
*Minor components:* 5 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Eldean

##### Setting

*Landform:* Kames, outwash terraces, moraines  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Loamy outwash over sandy and gravelly outwash

##### Typical profile

*H1 - 0 to 13 inches:* silt loam  
*H2 - 13 to 33 inches:* gravelly clay loam  
*H3 - 33 to 38 inches:* very gravelly sandy loam  
*H4 - 38 to 60 inches:* stratified sand to very gravelly loamy coarse sand

##### Properties and qualities

*Slope:* 2 to 6 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Well drained  
*Runoff class:* Medium  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 2.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum in profile:* 65 percent  
*Available water storage in profile:* Low (about 5.5 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 2e  
*Hydrologic Soil Group:* B

#### Minor Components

##### Loam surface layer

*Percent of map unit:* 3 percent

**Gravelly loam surface layer**

*Percent of map unit: 2 percent*

**MUF—Milton soils, channery variant, 25 to 50 percent slopes**

**Map Unit Setting**

*National map unit symbol: 5p5g*

*Elevation: 800 to 990 feet*

*Mean annual precipitation: 33 to 40 inches*

*Mean annual air temperature: 52 to 55 degrees F*

*Frost-free period: 155 to 208 days*

*Farmland classification: Not prime farmland*

**Map Unit Composition**

*Milton variant and similar soils: 90 percent*

*Minor components: 10 percent*

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Milton Variant**

**Setting**

*Landform: Till plains*

*Landform position (two-dimensional): Backslope*

*Landform position (three-dimensional): Side slope*

*Down-slope shape: Linear*

*Across-slope shape: Linear*

*Parent material: Colluvium derived from limestone over residuum weathered from limestone*

**Typical profile**

*H1 - 0 to 12 inches: very channery silt loam*

*H2 - 12 to 30 inches: channery silty clay loam*

*H3 - 30 to 32 inches: unweathered bedrock*

**Properties and qualities**

*Slope: 25 to 50 percent*

*Depth to restrictive feature: 20 to 40 inches to lithic bedrock*

*Natural drainage class: Well drained*

*Runoff class: High*

*Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)*

*Depth to water table: More than 80 inches*

*Frequency of flooding: None*

*Frequency of ponding: None*

*Calcium carbonate, maximum in profile: 15 percent*

*Available water storage in profile: Low (about 3.2 inches)*

**Interpretive groups**

*Land capability classification (irrigated): None specified*

*Land capability classification (nonirrigated): 7e*

*Hydrologic Soil Group: C*

**Minor Components**

**Limestone edges**

*Percent of map unit: 5 percent*

**Short slopes over 50 percent**

*Percent of map unit: 5 percent*

**Ws—Westland silty clay loam**

**Map Unit Setting**

*National map unit symbol: 5p78*

*Elevation: 350 to 1,000 feet*

*Mean annual precipitation: 35 to 45 inches*

*Mean annual air temperature: 48 to 55 degrees F*

*Frost-free period: 140 to 200 days*

*Farmland classification: Prime farmland if drained*

**Map Unit Composition**

*Westland and similar soils: 80 percent*

*Minor components: 20 percent*

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Westland**

**Setting**

*Landform: Depressions on outwash plains, depressions on stream terraces*

*Parent material: Loamy outwash over sandy and gravelly outwash*

**Typical profile**

*H1 - 0 to 14 inches: silty clay loam*

*H2 - 14 to 38 inches: clay loam*

*H3 - 38 to 52 inches: gravelly loam*

*H4 - 52 to 60 inches: stratified gravelly loam to clay loam to very gravelly loamy sand*

**Properties and qualities**

*Slope: 0 to 2 percent*

*Depth to restrictive feature: More than 80 inches*

*Natural drainage class: Very poorly drained*

*Runoff class: Medium*

*Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)*

*Depth to water table: About 0 to 12 inches*

*Frequency of flooding: None*

*Frequency of ponding: Frequent*

*Calcium carbonate, maximum in profile: 35 percent*

*Available water storage in profile: High (about 9.1 inches)*

**Interpretive groups**

*Land capability classification (irrigated): None specified*

## Custom Soil Resource Report

*Land capability classification (nonirrigated): 2w*

*Hydrologic Soil Group: C/D*

### **Minor Components**

#### **Sloan**

*Percent of map unit: 8 percent*

*Landform: Flood plains*

#### **Ragsdale**

*Percent of map unit: 5 percent*

*Landform: Terraces, till plains*

#### **Till substratum**

*Percent of map unit: 4 percent*

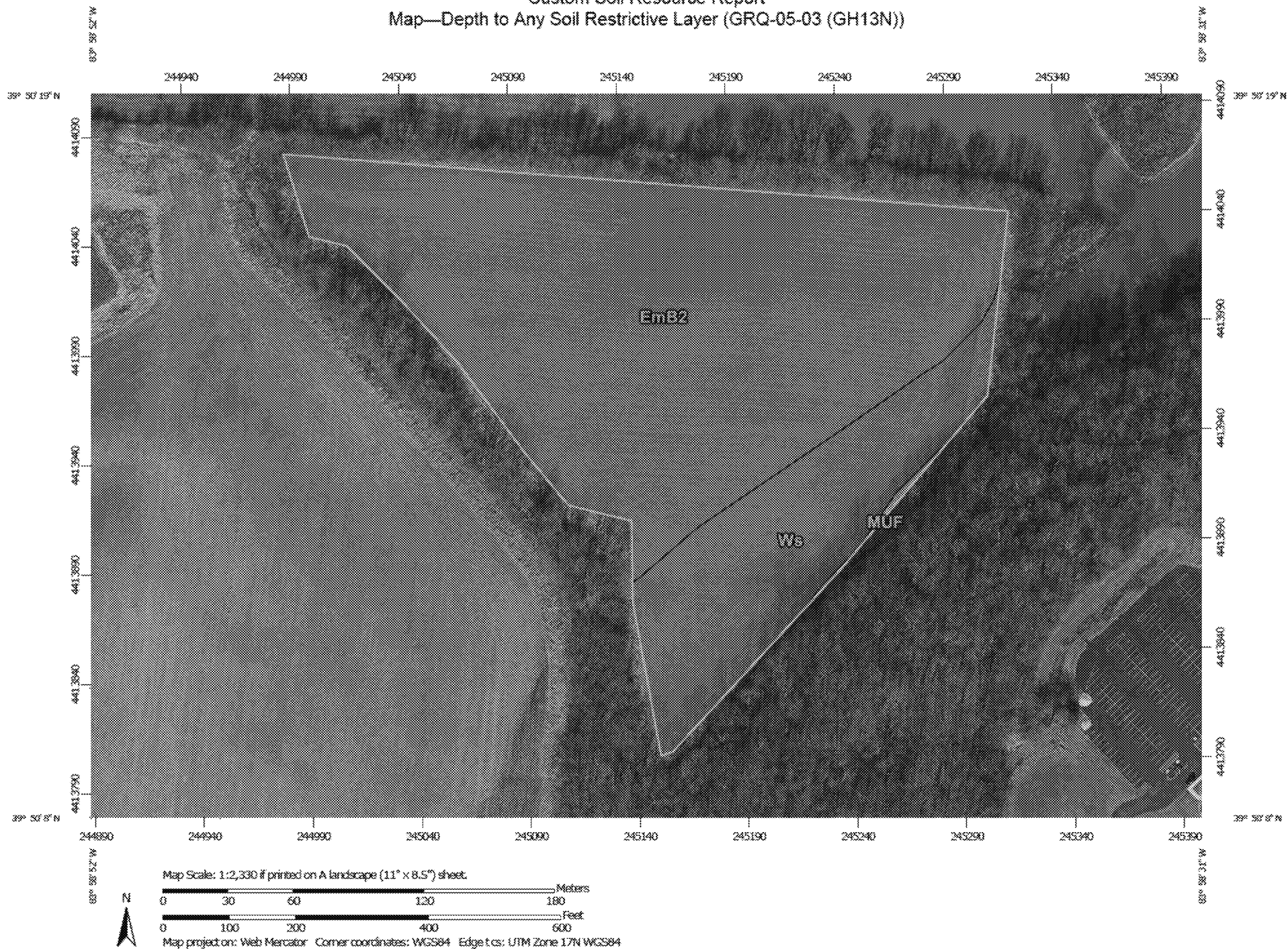
*Landform: Depressions on stream terraces, depressions on outwash plains*

#### **Silt loam surface**

*Percent of map unit: 3 percent*


*Landform: Depressions on outwash plains, depressions on stream terraces*

Custom Soil Resource Report  
Map—Depth to Any Soil Restrictive Layer (GRQ-05-03 (GH13N))










## MAP LEGEND

### Area of Interest (AOI)








 Area of Interest (AOI)

### Soils







#### Soil Rating Polygons


-  0 - 25
-  25 - 50
-  50 - 100
-  100 - 150
-  150 - 200
-  > 200
-  Not rated or not available

#### Soil Rating Lines


-  0 - 25
-  25 - 50
-  50 - 100
-  100 - 150
-  150 - 200
-  > 200
-  Not rated or not available

#### Soil Rating Points

-  0 - 25
-  25 - 50
-  50 - 100
-  100 - 150
-  150 - 200
-  > 200

 Not rated or not available

### Water Features

 Streams and Canals

### Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

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**Table—Depth to Any Soil Restrictive Layer (GRQ-05-03 (GH13N))**

Depth to Any Soil Restrictive Layer— Summary by Map Unit — Greene County, Ohio (OH057)				
Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
EmB2	Eldean silt loam, 2 to 6 percent slopes, moderately eroded	>200	8.5	76.4%
MUF	Milton soils, channery variant, 25 to 50 percent slopes	76	0.0	0.3%
Ws	Westland silty clay loam	>200	2.6	23.3%
<b>Totals for Area of Interest</b>			<b>11.1</b>	<b>100.0%</b>

### **Rating Options—Depth to Any Soil Restrictive Layer (GRQ-05-03 (GH13N))**

*Units of Measure:* centimeters

*Aggregation Method:* Dominant Component

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Lower

*Interpret Nulls as Zero:* No

### **Hydrologic Soil Group (GRQ-05-03 (GH13N))**

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.


Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils

Custom Soil Resource Report  
Map—Hydrologic Soil Group (GRQ-05-03 (GH13N))











## MAP LEGEND

### Area of Interest (AOI)









 Area of Interest (AOI)

### Soils





#### Soil Rating Polygons





 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

#### Soil Rating Lines

 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

#### Soil Rating Points

 A  
 A/D  
 B  
 B/D

 C  
 C/D  
 D  
 Not rated or not available

### Water Features

 Streams and Canals

### Transportation

 Rails  
 Interstate Highways  
 US Routes  
 Major Roads  
 Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

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**Table—Hydrologic Soil Group (GRQ-05-03 (GH13N))**

Hydrologic Soil Group— Summary by Map Unit — Greene County, Ohio (OH057)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
EmB2	Eldean silt loam, 2 to 6 percent slopes, moderately eroded	B	8.5	76.4%
MUF	Milton soils, channery variant, 25 to 50 percent slopes	C	0.0	0.3%
Ws	Westland silty clay loam	C/D	2.6	23.3%
<b>Totals for Area of Interest</b>			<b>11.1</b>	<b>100.0%</b>

**Rating Options—Hydrologic Soil Group (GRQ-05-03 (GH13N))**

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher

**Division of Surface Water**  
 Application for Authorization  
 Class B Beneficial Use Sites

**Form BUA-4 Page 1 of 2**

**Beneficial Use Site Information**

Ohio EPA Site I.D. (Ohio EPA Use Only)

Field site I.D.: GRQ-05-04 (GH28)	
Beneficial use site location: 0.3 miles east of Black Ln., south of Armstrong Rd.	
County: Greene	Township: Bath
Latitude: 39°49'59.32"N	Longitude: 83°58'52.41"W

Total acreage proposed for beneficial use: 26.7															
Soil pH (s.u.): 7.6	Soil phosphorus (mg/kg): 28														
Bedrock depth (feet): >3ft	Bray Kurtz P1 <input checked="" type="checkbox"/> Mehlich 3 <input type="checkbox"/>														
Type of crops to be grown:															
<table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Crop Type</th> <th style="text-align: center;">Expected Yield</th> </tr> </thead> <tbody> <tr> <td>Corn</td> <td style="text-align: center;">200 bu</td> </tr> <tr> <td>Soybeans</td> <td style="text-align: center;">50 bu</td> </tr> <tr> <td>Wheat</td> <td></td> </tr> <tr> <td>Pasture</td> <td></td> </tr> <tr> <td>Hay</td> <td></td> </tr> <tr> <td>Other:</td> <td></td> </tr> </tbody> </table>		Crop Type	Expected Yield	Corn	200 bu	Soybeans	50 bu	Wheat		Pasture		Hay		Other:	
Crop Type	Expected Yield														
Corn	200 bu														
Soybeans	50 bu														
Wheat															
Pasture															
Hay															
Other:															

**Division of Surface Water**  
Application for Authorization  
Class B Beneficial Use Sites

Soil Types:

Soil Unit Symbol	Soil Unit Name	Hydrologic Soil Group
EmC2	Eldean silt loam, 6-12% slopes, moderately eroded	B
MUF	Milton soils, channery variant, 25-50% slopes	C
Ws	Westland silty clay loam	C/D

Are any endangered species or endangered species habitats located on the beneficial use site?

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
------------------------------	--

If "Yes" is marked, list the types of endangered species or endangered species habitat:

--	--

Have biosolids been beneficially used on the site since July 20, 1993?

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
------------------------------	--

If "Yes" is marked, list the biosolids generators and years beneficial use occurred:

Generator	Year of Beneficial Use

The application must also include all of the following.

- A soil map of the proposed beneficial use site.
- An aerial map of the proposed beneficial use site that clearly identifies the entrance of the beneficial use site from the nearest road and all applicable isolation distances as established in Chapter 3745-40 of the Ohio Administrative Code.
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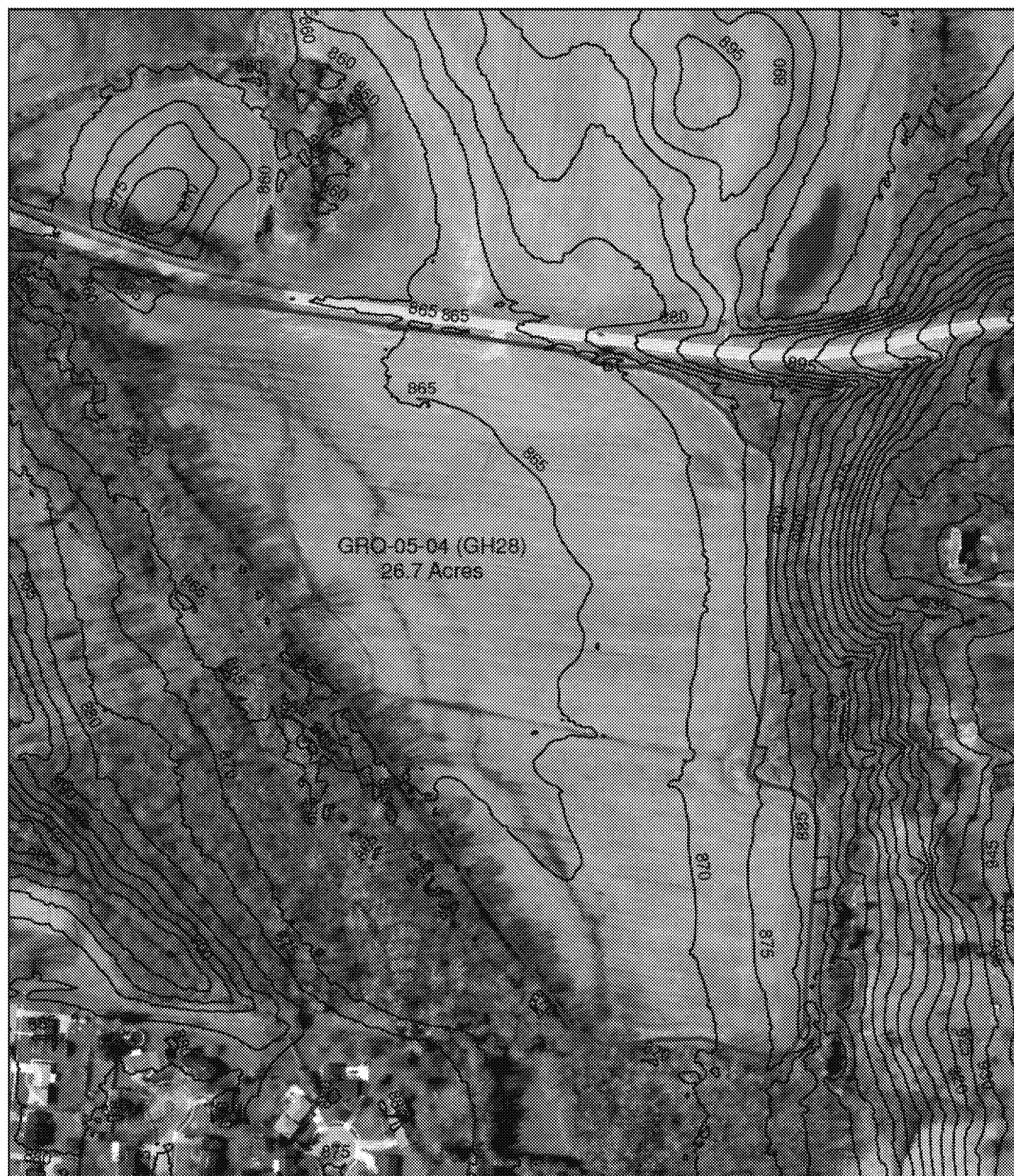
# GRQ-05-04 (GH28)



0 150 300 600 900 1,200 Feet

- Watercourse
- Residences
- 100ftbuffer
- 300ftbuffer
- 33ftbuffer

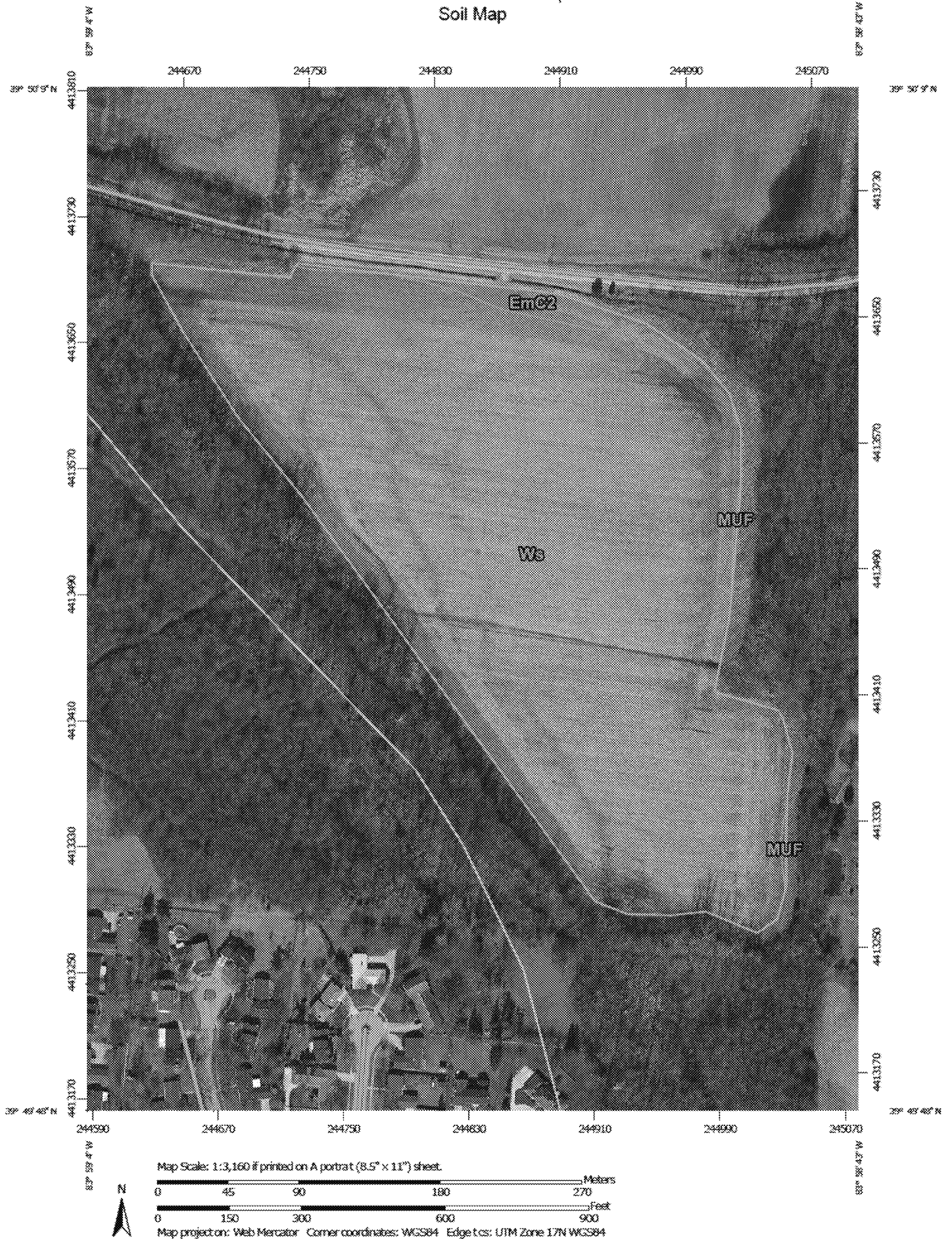
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— 5ft\_contours


# Custom Soil Resource Report Soil Map




## Custom Soil Resource Report


### MAP LEGEND

#### Area of Interest (AOI)

 Area of Interest (AOI)


#### Soils


 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

#### Special Point Features

 Blowout


 Borrow Pit


 Clay Spot


 Closed Depression

 Gravel Pit


 Gravelly Spot

 Landfill


 Lava Flow

 Marsh or swamp


 Mine or Quarry


 Miscellaneous Water


 Perennial Water

 Rock Outcrop


 Saline Spot


 Sandy Spot


 Severely Eroded Spot


 Sinkhole


 Slide or Slip


 Sodic Spot


 Spoil Area

 Stony Spot


 Very Stony Spot

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 Other

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 Local Roads

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## Map Unit Legend

Greene County, Ohio (OH057)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
EmC2	Eldean silt loam, 6 to 12 percent slopes, moderately eroded	0.4	1.8%
MUF	Milton soils, channery variant, 25 to 50 percent slopes	0.0	0.2%
Ws	Westland silty clay loam	22.8	98.0%
<b>Totals for Area of Interest</b>		<b>23.3</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If

## Greene County, Ohio

### EmC2—Eldean silt loam, 6 to 12 percent slopes, moderately eroded

#### Map Unit Setting

*National map unit symbol:* 5p56

*Elevation:* 670 to 1,160 feet

*Mean annual precipitation:* 29 to 45 inches

*Mean annual air temperature:* 50 to 55 degrees F

*Frost-free period:* 151 to 192 days

*Farmland classification:* Farmland of local importance

#### Map Unit Composition

*Eldean and similar soils:* 90 percent

*Minor components:* 10 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Eldean

##### Setting

*Landform:* Kames, outwash terraces, moraines

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Loamy outwash over sandy and gravelly outwash

##### Typical profile

*H1 - 0 to 13 inches:* silt loam

*H2 - 13 to 33 inches:* gravelly clay

*H3 - 33 to 38 inches:* very gravelly sandy loam

*H4 - 38 to 60 inches:* stratified sand to very gravelly loamy coarse sand

##### Properties and qualities

*Slope:* 6 to 12 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Runoff class:* Medium

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 2.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum in profile:* 65 percent

*Available water storage in profile:* Low (about 5.5 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 3e

*Hydrologic Soil Group:* B

#### Minor Components

##### Casco

*Percent of map unit:* 5 percent

*Landform:* Kames, outwash terraces, moraines

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear

*Across-slope shape:* Linear

**Loam or gravelly loam surface**

*Percent of map unit:* 3 percent

**Severely eroded areas**

*Percent of map unit:* 2 percent

**MUF—Milton soils, channery variant, 25 to 50 percent slopes**

**Map Unit Setting**

*National map unit symbol:* 5p5g

*Elevation:* 800 to 990 feet

*Mean annual precipitation:* 33 to 40 inches

*Mean annual air temperature:* 52 to 55 degrees F

*Frost-free period:* 155 to 208 days

*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Milton variant and similar soils:* 90 percent

*Minor components:* 10 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Milton Variant**

**Setting**

*Landform:* Till plains

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Colluvium derived from limestone over residuum weathered from limestone

**Typical profile**

*H1 - 0 to 12 inches:* very channery silt loam

*H2 - 12 to 30 inches:* channery silty clay loam

*H3 - 30 to 32 inches:* unweathered bedrock

**Properties and qualities**

*Slope:* 25 to 50 percent

*Depth to restrictive feature:* 20 to 40 inches to lithic bedrock

*Natural drainage class:* Well drained

*Runoff class:* High

*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.06 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum in profile:* 15 percent

## Custom Soil Resource Report

*Available water storage in profile:* Low (about 3.2 inches)

### **Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 7e

*Hydrologic Soil Group:* C

### **Minor Components**

#### **Limestone edges**

*Percent of map unit:* 5 percent

#### **Short slopes over 50 percent**

*Percent of map unit:* 5 percent

## **Ws—Westland silty clay loam**

### **Map Unit Setting**

*National map unit symbol:* 5p78

*Elevation:* 350 to 1,000 feet

*Mean annual precipitation:* 35 to 45 inches

*Mean annual air temperature:* 48 to 55 degrees F

*Frost-free period:* 140 to 200 days

*Farmland classification:* Prime farmland if drained

### **Map Unit Composition**

*Westland and similar soils:* 80 percent

*Minor components:* 20 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Westland**

#### **Setting**

*Landform:* Depressions on outwash plains, depressions on stream terraces

*Parent material:* Loamy outwash over sandy and gravelly outwash

#### **Typical profile**

*H1 - 0 to 14 inches:* silty clay loam

*H2 - 14 to 38 inches:* clay loam

*H3 - 38 to 52 inches:* gravelly loam

*H4 - 52 to 60 inches:* stratified gravelly loam to clay loam to very gravelly loamy sand

#### **Properties and qualities**

*Slope:* 0 to 2 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Very poorly drained

*Runoff class:* Medium

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.60 in/hr)

*Depth to water table:* About 0 to 12 inches

*Frequency of flooding:* None

*Frequency of ponding:* Frequent

## Custom Soil Resource Report

*Calcium carbonate, maximum in profile:* 35 percent

*Available water storage in profile:* High (about 9.1 inches)

### **Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2w

*Hydrologic Soil Group:* C/D

### **Minor Components**

#### **Sloan**

*Percent of map unit:* 8 percent

*Landform:* Flood plains

#### **Ragsdale**

*Percent of map unit:* 5 percent

*Landform:* Terraces, till plains

#### **Till substratum**

*Percent of map unit:* 4 percent

*Landform:* Depressions on stream terraces, depressions on outwash plains

#### **Silt loam surface**

*Percent of map unit:* 3 percent


*Landform:* Depressions on outwash plains, depressions on stream terraces

Custom Soil Resource Report  
 Map—Depth to Any Soil Restrictive Layer (GRQ-05-04 (GH28))










## MAP LEGEND

### Area of Interest (AOI)








 Area of Interest (AOI)

### Soils







#### Soil Rating Polygons


-  0 - 25
-  25 - 50
-  50 - 100
-  100 - 150
-  150 - 200
-  > 200
-  Not rated or not available

#### Soil Rating Lines

-  0 - 25
-  25 - 50
-  50 - 100
-  100 - 150
-  150 - 200
-  > 200
-  Not rated or not available

#### Soil Rating Points

-  0 - 25
-  25 - 50
-  50 - 100
-  100 - 150
-  150 - 200
-  > 200

 Not rated or not available

### Water Features

 Streams and Canals

### Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>  
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Greene County, Ohio  
Survey Area Data: Version 11, Sep 18, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 30, 2010—Mar 10, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

**Table—Depth to Any Soil Restrictive Layer (GRQ-05-04 (GH28))**

Depth to Any Soil Restrictive Layer— Summary by Map Unit — Greene County, Ohio (OH057)				
Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
EmC2	Eldean silt loam, 6 to 12 percent slopes, moderately eroded	>200	0.4	1.8%
MUF	Milton soils, channery variant, 25 to 50 percent slopes	76	0.0	0.2%
Ws	Westland silty clay loam	>200	22.8	98.0%
<b>Totals for Area of Interest</b>			<b>23.3</b>	<b>100.0%</b>

### **Rating Options—Depth to Any Soil Restrictive Layer (GRQ-05-04 (GH28))**

*Units of Measure:* centimeters

*Aggregation Method:* Dominant Component

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Lower

*Interpret Nulls as Zero:* No

### **Hydrologic Soil Group (GRQ-05-04 (GH28))**

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.


Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils

Custom Soil Resource Report  
Map—Hydrologic Soil Group (GRQ-05-04 (GH28))











## MAP LEGEND

### Area of Interest (AOI)









 Area of Interest (AOI)

### Soils



#### Soil Rating Polygons





 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

#### Soil Rating Lines


 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

#### Soil Rating Points

 A  
 A/D  
 B  
 B/D

 C  
 C/D  
 D  
 Not rated or not available

### Water Features

 Streams and Canals

### Transportation

 Rails  
 Interstate Highways  
 US Routes  
 Major Roads  
 Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Greene County, Ohio  
 Survey Area Data: Version 11, Sep 18, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 30, 2010—Mar 10, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

**Table—Hydrologic Soil Group (GRQ-05-04 (GH28))**

Hydrologic Soil Group— Summary by Map Unit — Greene County, Ohio (OH057)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
EmC2	Eldean silt loam, 6 to 12 percent slopes, moderately eroded	B	0.4	1.8%
MUF	Milton soils, channery variant, 25 to 50 percent slopes	C	0.0	0.2%
Ws	Westland silty clay loam	C/D	22.8	98.0%
<b>Totals for Area of Interest</b>			<b>23.3</b>	<b>100.0%</b>

**Rating Options—Hydrologic Soil Group (GRQ-05-04 (GH28))**

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher

## Farm Map

Prepared For: Pitstick Pork Farms

Farm: Exemption 6

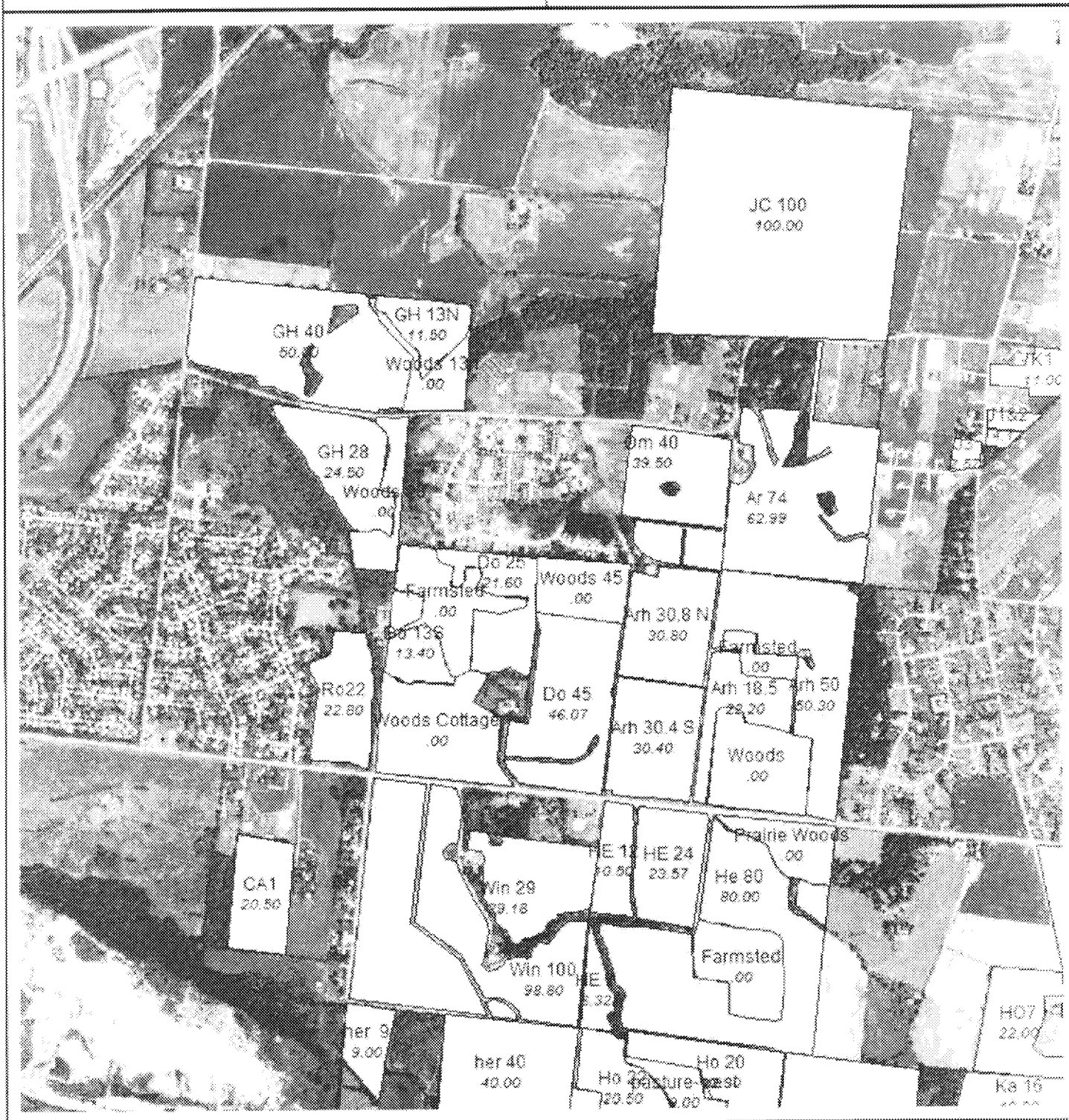
Field:

County: Greene, OH

Crop Zone:

Crop Year:

Prepared By:



## Soil Test Results www.AdvancedAgSolutions.com

Prepared For: Pitstick, Tom	County: Greene, OH
Farm: [REDACTED]	Twp Rng Sec:
Field: GH98	Directions:
Crop Zone:	
Crop Year: 2013	Acres: 0.00

Layer Name: Soil Test 2013

Date Sampled: March 14, 2013

SampleID	LabID	OM	P	K	Mg	Ca	CEC	pH	BpH	Ca %	Mg %	K %	Su	Bo	Zn	Mn	Fe	Cu
	none	%	ppm	ppm	ppm	ppm	meq/100g	unit	unit	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm
1	E4033	4.8	14	160	411	7291	18.4	7.6		81.7	16.4	1.9						
2	E4033	2.5	7	202	990	3923	22.4	7.7		65.7	32.4	1.9						
3	E4033	3.6	22	243	867	5224	20.4	7.8		73.5	24.0	2.6						
4	E4033	4.6	20	282	605	6202	20.0	7.8		74.8	22.1	3.0						
5	E4033	3.9	13	195	322	6834	17.8	7.7		84.4	13.3	2.4						
6	E4033	4.6	10	152	476	18250	18.8	7.6		79.7	18.5	1.7						
7	E4033	3.5	33	200	386	20380	18.3	7.6		82.1	15.5	2.4						
8	E4033	3.0	10	165	853	4823	21.6	7.3		69.4	28.9	1.6						
9	E4034	2.5	15	152	303	2686	15.8	6.6	7.1	63.8	14.1	2.1						
10	E4034	1.2	20	77	233	1456	7.3	6.4	7.0	74.4	23.3	2.3						
11	E4034	2.1	32	160	616	2724	15.1	7.6		67.8	30.0	2.3						
12	E4034	3.8	33	244	797	3564	19.7	7.4		67.7	29.6	2.7						
13	E4034	1.7	12	183	502	2786	18.1	6.2	6.7	57.6	20.3	2.2						

Layer Name: Soil Test 2013

Date Sampled: March 14, 2013

SampleID	LabID	OM	P	K	Mg	Ca	CEC	pH	BpH	Ca %	Mg %	K %	Su	Bo	Zn	Mn	Fe	Cu
	name	%	ppm	ppm	ppm	ppm	meq/100g	unit	unit	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm
14	E4034 5	2.0	13	103	142	932	7.2	5.5	6.8	48.8	14.5	3.1						
15	E4034 6	2.2	12	157	327	1404	10.4	5.7	6.8	50.6	23.1	3.3						
16	E4034 7	2.4	12	140	324	1615	9.9	5.8	6.9	61.0	23.9	3.0						
17	E4034 8	2.5	13	157	523	1856	14.7	5.9	6.7	47.2	26.0	2.3						
18	E4034 9	4.0	17	173	726	2332	16.6	7.0		52.7	32.1	2.2						
19	E4035 0	6.6	136	347	502	5402	19.4	7.4		77.2	18.9	3.8						
20	E4035 1	1.2	18	151	1061	6093	23.1	7.5		64.9	33.7	1.4						
21	E4035 2	12.9	11	80	128	735	7.5	5.4	6.7	36.9	12.6	2.3						
22	E4035 3	9.1	14	124	921	8791	22.0	7.8		68.1	30.7	1.2						
23	E4035 4	8.1	14	152	779	7494	21.0	7.5		71.3	27.2	1.6						
24	E4035 5	4.3	17	164	832	5912	21.5	7.5		69.9	28.4	1.6						
25	E4035 6	3.6	26	158	350	8368	17.9	7.8		83.8	14.3	1.9						
26	E4035 7	4.1	25	157	350	9468	17.9	7.9		83.8	14.3	1.9						
27	E4035 8	3.8	21	185	353	6847	18.0	7.8		83.4	14.4	2.2						
28	E4035 9	4.4	26	182	329	6601	17.8	7.8		84.2	13.6	2.2						
29	E4036 0	4.0	19	177	334	9449	17.8	7.8		84.1	13.7	2.1						
Average:		4.0	22	173	522	5843	17.1	7.1	6.8	69.3	21.7	2.2						